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Flerula Bostoniensis

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FLORULA BOSTONIENSIS.

A

COLLECTION

or

PLANTS OF BOSTON

AND

ITS VICINITY,

WITH THEIR

GENERIC AND SPECIFIC CHARACTERS, PRINCIPAL SYNONYMS, DESCRIPTIONS, PLACES OF GROWTH, AND TIME OF FLOWERING,

AND

Occasional Remarks.

BY JACOB BIGELOW, M. D.

Professor in Harvard University. Member of the Linneæan Societies of London and Paris.

SECOND EDITION GREATLY ENLARGED.

TO WHICH IS ADDED

A GLOSSARY OF THE BOTANICAL TERMS

EMPLOYED IN THE WORK.

BOSTON :

PUBLISHED BY CUMMINGS, HILLIARD, & Co

University Press—Hilliard & Metcalf.

1824.

DISTRICT OF MASSACHUSETTS, *to wit*:

District Clerk's Office.

BE IT REMEMBERED, that on the twenty-eighth day of June A. D. 1824, in the forty-eighth year of the Independence of the United States of America, Cummings, Hilliard, & Co. of the said district have deposited in this office the title of a book, the right whereof they claim as proprietors, in the words following, *to wit*:

“*Florula Bostoniensis*: A Collection of Plants of Boston and its vicinity, with their generic and specific characters, principal synonyms, descriptions, places of growth, and time of flowering, and occasional remarks. By Jacob Bigelow, M. D. Professor in Harvard University. Member of the Linnaean Societies of London and Paris. Second edition greatly enlarged. To which is added a Glossary of the botanical terms employed in the work.”

In conformity to the act of the Congress of the United States, entitled “An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned;” and also to an act, entitled “An act supplementary to an act, entitled ‘An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned;’ and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints.”

JOHN W. DAVIS,

Clerk of the District of Massachusetts.

9171

PREFACE

TO THE SECOND EDITION.



THE first edition of the *Florula Bostoniensis* was published in 1814, for the use of a botanical class in this city. It was intended to contain intelligible descriptions of the more common and interesting plants found within a circuit of about ten miles around Boston. Its publication was at that time rendered necessary by the great deficiency of books relating to American plants, and by the difficulty of obtaining foreign works of a character suited to supply this deficiency. Similar causes afterwards led me, in conjunction with my friend, Dr. Francis Boott, to begin the collection of materials for a *Flora* of the New England states. In the pursuit of this object we performed several botanical tours, both on the sea coast and in various parts of the interior. The most remarkable mountains of New-Hampshire and Vermont, which, from their position and elevation, afford a different vegetation from other parts of the United States, were visited by us, and some progress was made in the proposed undertaking. The design, however, was subsequently relinquished, having been rendered more difficult by other engagements, while it became less necessary, in consequence of the appearance of various American botanical works. The publications of Muhlenberg, Pursh, Elliott, Nuttall, Eaton and Torrey, with other works of a more limited character, have certainly contributed much to fill the void which existed in American botany ten years ago.

The materials formerly collected towards a *Flora* of New England not having been published, and the first edition of the *Florula Bostoniensis* having been long out of print, I have been repeatedly desired by the publishers of the latter work to prepare an enlarged edition for the press. The nature of my occupations, however, has prevented me from giving the requisite attention to this object, until the present period. Perhaps the value of the work will not be diminished by this delay.

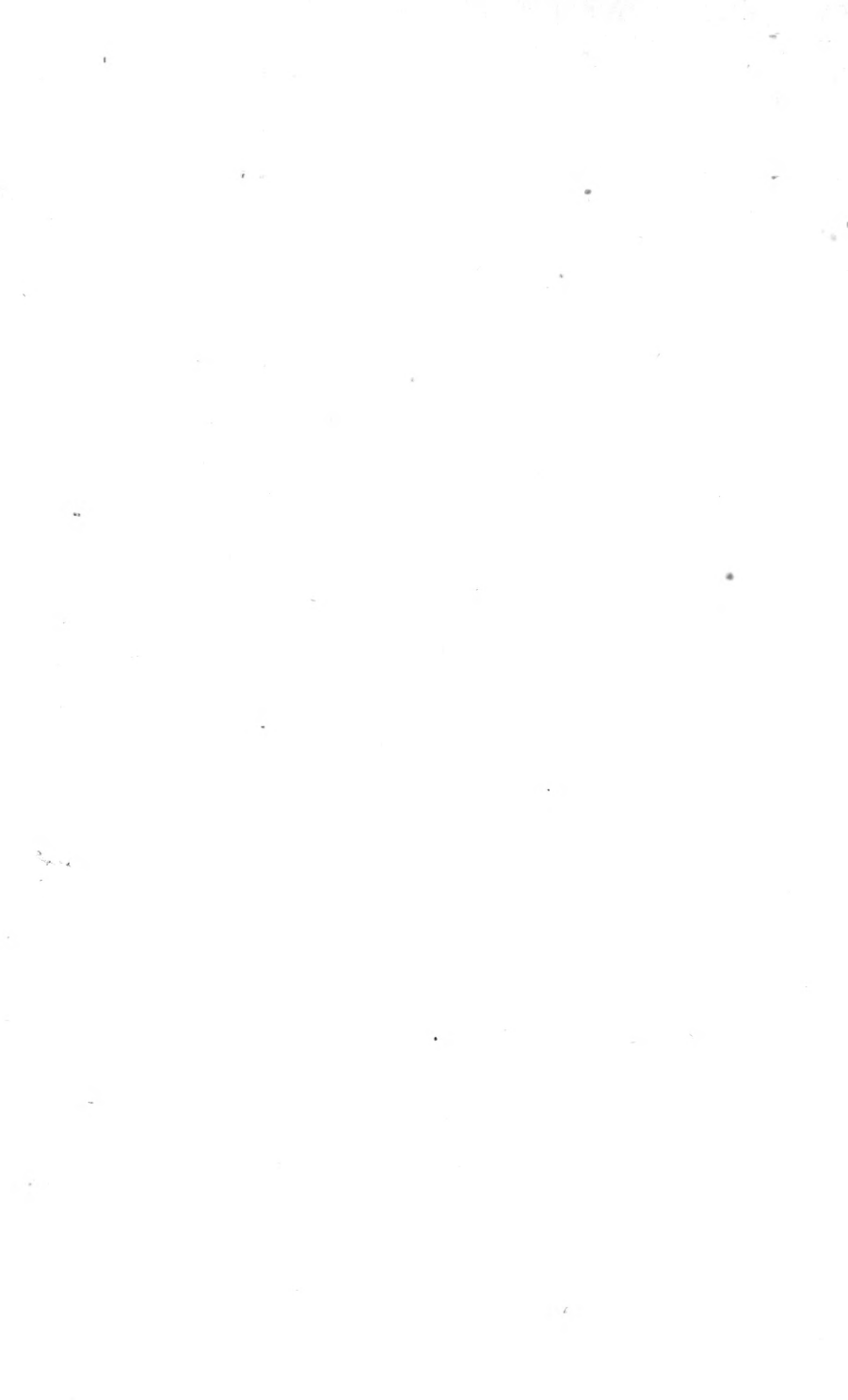
The edition now offered to the public contains about twice the number of plants which were included in the first edition. Many of the former descriptions have been enlarged or amended from reexaminations of living plants, and many have been written out anew. Although the work more immediately applies to Boston and its environs, yet I have inserted in this edition all such plants as I have formerly collected and described in any part of the New-England states. For the convenience of students a *Glossary*, explanatory of the technical terms used in the work, is added to this edition.

I have in general preferred to retain the older names of genera, especially such as were in the first edition of this work, introducing as subgenera the divisions of later botanists, together with some others, to which future distributors will, no doubt, give names. It is vain to attempt keeping pace with the continually shifting nomenclature of plants; and it may justly be questioned whether the benefit which results from making generic distinctions more precise, is not more than counterbalanced by the load of synonyms which it brings with it, and the discouraging necessity which it imposes on students of the science, to unlearn continually what they have acquired.

The field of vegetation, which has already been explored, is so vast, that an universal botanist is a character now unknown. The most useful and satisfactory pursuit of the science, for persons with common advantages, will be found in attention to the native plants of a limited district. Even the *Flora* of the United States is now too extensive to come easily

within the grasp of an individual ; and that of any considerable section of our territory may furnish full occupation for years. To students of the present volume who may wish to extend the sphere of their inquiries ; I have great pleasure in recommending the Flora of the Middle and Northern sections of the United States, by Dr. Torrey of New-York, now in the course of publication. The accuracy and constancy of pursuit manifested by this gentleman entitle him to all praise from those who appreciate the amount of perseverance necessary to accomplish labours of this sort.

Boston, June, 1824.



ABBREVIATIONS.

<p><i>Ait.</i> Aiton.</p> <p><i>Curt.</i> Curtis.</p> <p><i>Desf.</i> Desfontaines.</p> <p><i>Ell.</i> Elliott.</p> <p><i>Erh.</i> Ehrhart.</p> <p><i>Fræl.</i> Frølich.</p> <p><i>Gært.</i> Gærtner.</p> <p><i>Gron.</i> Gronovius.</p> <p><i>Huds.</i> Hudson.</p> <p><i>L.</i> Linnæus.</p> <p><i>Lam.</i> Lamarck.</p> <p><i>Lamb.</i> Lambert.</p> <p><i>l'Her.</i> l'Heritier.</p> <p><i>Mich. Mx.</i> Michaux.</p>	<p><i>Mich. f.</i> Michaux the younger.</p> <p><i>Mill.</i> Miller.</p> <p><i>Muhl.</i> Muhlenburg.</p> <p><i>Nutt.</i> Nuttall.</p> <p><i>Pers.</i> Persoon.</p> <p><i>Ph</i> Pursh.</p> <p><i>Povr.</i> Poiret.</p> <p><i>Reich.</i> Reichard.</p> <p><i>Sm.</i> Smith.</p> <p><i>Sx.</i> Swartz.</p> <p><i>Tor.</i> Torrey.</p> <p><i>Walt.</i> Walter.</p> <p><i>Wang.</i> Wangenheim.</p> <p><i>Willd.</i> Willdenow.</p>
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Sub. syn. Under the synonym.

Abr. Abridged.

M. t. The terms being changed.

FLORULA BOSTONIENSIS.

Class I. MONANDRIA. One Stamen.

Order I. MONOGYNIA. One style.

1. SALICORNIA. Calyx inflated, entire; petals none; stamens one or two; seed one, inclosed in the calyx.

Order II. DIGYNIA. Two styles.

2. CALLITRICHE. Calyx none; petals two; seeds four, compressed, naked, with a margin on one side; flowers sometimes monœcious.

3. BLITUM. Calyx three cleft; petals none; seed one covered with the berried calyx,

MONANDRIA.

MONOGYNIA.

1. SALICORNIA.

SALICORNIA HERBACEA. *Common Samphire, or Pigeons foot.*

Herbaceous, spreading; joints compressed at the top, truncated; spikes linear with obtuse scales.

Stem erect, leafless, somewhat four-sided, the joints widened at top and truncated, not emarginate. Branches numerous, compound or decompound, sometimes double. Spikes lateral and terminal, linear, from twelve to twenty times longer than they

are wide in fruit. Scales rather obtuse with a slight membranous border. Flowers three on each side, the highest being largest.—Salt marshes.—August.—Annual.

At the latter end of the season the lower part of the stem shrinks and becomes woody; the plant however is strictly annual.

This plant agrees exactly with specimens from England and the continent of Europe. It is however more branched and slender than the engravings usually published of the European plant.

**SALICORNIA MUCRONATA.* *Dwarf Samphire.*

S. humilis, herbacea—articulis inferne tetragonis, superne compressis, truncatis—spiculis oblongis, squamis mucronatis.

Low, herbaceous; joints quadrangular at bottom, compressed and truncated at top; spikes oblong with mucronated scales.

Stem erect, leafless, the joints quadrangular at bottom, widened and entire, not emarginate at top. Branches few, compound, in small plants simple. Spikes lateral and terminal, oblong, four or five times as long as they are wide when in fruit. Scales very acute or mucronate with a slight membranous border.—Salt marshes.—August.—Annual.

This plant is less than half the height of the preceding, but thicker in all its parts, and always distinguishable at sight. Spikes very thick, with remarkably acute scales. It is wholly unlike *S. ambigua* Mx. of which I have southern specimens with slender branches and spikes and obtuse scales.

Different species of *Salicornia* are among the maritime plants employed in the manufacture of soda. They are used at table as pickles.

DIGYNIA.

2. CALLITRICHE.

CALLITRICHE AQUATICA. *Sm.* *Water starwort.*

Stem floating; upper leaves spatulate, obovate.

Synonym. *CALLITRICHE VERNA.* L.

The stem is filiform, floating, and composed of a double tube. The leaves are small, opposite, inversely ovate or wedge-shaped, rounded at the end, (not acute as in the European;) the upper ones forming star-like tufts on the ends of the stem. Flowers minute, axillary, solitary, sessile. It grows in fresh water, supported by its floating upper leaves; flowering above, but ripening its seeds under water.—Found in Roxbury.—Annual.

3. BLITUM.

BLITUM CAPITATUM.

Strawberry Blite.

Leaves triangular-hastate; heads alternate, forming a terminal leafless spike.

A weed in cultivated grounds, with a fruit resembling some of the esculent, compound berries, but unpleasant.—June.—Annual.



Class II. DIANDRIA. *Two stamens.*

Order I. MONOGYNIA. One style.

A. Flowers inferior, monopetalous, regular.

4. *LIGUSTRUM.* Corolla four cleft; berry two celled, four seeded.

B. Flowers inferior, monopetalous, irregular, fruit capsular.

5. *VERONICA.* Calyx four parted; corolla four cleft; rotate, the lowest division narrow; capsule superior, two celled; obcordate.

6. *LEPTANDRA.* Calyx five parted; corolla tubular campanulate; stamens much exerted; capsule ovate, acuminate.

7. *GRATIOLA.* Corolla resupinate, four cleft, two lipped; calyx mostly seven leaved; stamens four, two of them barren; capsule two celled.

8. **LINDERNIA.** Calyx five parted ; corolla resupinate, upper lip reflected ; filaments four, the two longer ones forked and barren ; capsule two celled.

9. **UTRICULARIA.** Corolla ringent, spurred ; calyx two leaved ; capsule one celled.

C. *Flowers inferior, monopetalous, irregular : seeds naked.*

10. **LYCOPUS.** Corolla four cleft, nearly equal, one of the divisions notched ; stamens distant ; seeds four.

11. **MONARDA.** Corolla ringent ; upper lip linear, involving the filaments ; seeds four.

12. **CUNILA.** Corolla ringent ; upper lip flat ; stamens four, two of them barren ; seeds four.

13. **COLLINSONIA.** Corolla somewhat ringent ; lower lip many cleft, capillary ; seed one.

D. *Flowers superior.*

14. **CIRCÆA.** Calyx two leaved ; corolla two petalled ; petals inversely heart shaped ; capsule two celled ; cells one seeded.

DIANDRIA.

MONOGYNIA.

4. LIGUSTRUM.

LIGUSTRUM VULGARE. L. *Privet or Prim.*

Leaves lanceolate, acute ; panicle crowded.

An ornamental shrub with smooth, opposite, spear shaped leaves, thickening at the ends of the branches. Remarkable in summer for its panicles of small white flowers, and in autumn for its conical bunches of black berries.—Frequent in woods and near fences, particularly in Roxbury.—May, June.

5. VERONICA.

VERONICA OFFICINALIS.

Common Speedwell.

Spike lateral; leaves broad ovate or oval, hairy; stem procumbent; capsule deeply obcordate.

Stem branching, spreading; leaves opposite, rough; flowers pale blue, veined.—Woods and fields.—May, July.—Perennial.

All the species here mentioned are common to Europe, and probably most of them introduced.

VERONICA SERPYLLIFOLIA. L.

Smooth Speedwell.

Raceme terminal, somewhat spiked; leaves ovate somewhat crenate, three nerved, glabrous; capsules obcordate, shorter than the styles.

A small plant, hardly distinguishable among the grass except when in flower. Stem decumbent, rooting at the base; leaves opposite, roundish ovate; flowers bluish white with violet stripes; capsules inversely heart shaped.—Pastures and road sides.—May, June.—Perennial.

VERONICA SCUTELLATA. L.

Marsh Speedwell

Racemes lateral, alternate; partial flower stalks divaricated; leaves linear, slightly indented.

Stem weak, leaves opposite, linear-lanceolate slightly toothed; racemes axillary, consisting of a few small flowers of a pale flesh colour with purplish stripes. Stalks of the fruit bent backward. Found very common in wet places, varying in size according to the quantity of water, flowering all summer.—Perennial.

VERONICA ANAGALLIS. L.

Water Speedwell.

Racemes opposite, leaves lanceolate serrate, stem erect.

Stem somewhat quadrangular; racemes many flowered, with short petioles; flowers purplish. The leaves sometimes approach to ovate.—In ditches all summer.—Perennial.

VERONICA BECCABUNGA. L.

Brooklime.

Racemes opposite; leaves elliptical, obtuse, subserrate, glabrous; stem procumbent, rooting at base.

A fleshy, succulent species with blue flowers.—Ditches and brooks.—June, July.—Perennial.

VERONICA AGRESTIS. *L.* *Procumbent Speedwell.*

Flowers axillary ; leaves petioled, heart-ovate, cut-serrate, shorter than the peduncles ; stem procumbent.

Stem branched ; lower leaves opposite, the rest alternate ; flowers bluish white, striated.—Roads and fields.—May, July.—Annual.

VERONICA ARVENSIS. *L.* *Small Speedwell.*

Flowers axillary ; leaves heart-ovate, serrate, the lower ones petioled ; floral leaves lanceolate, longer than the peduncles.

A pubescent plant, rather smaller than the foregoing. Corolla pale blue, shorter than the calyx.—May, June.—Annual.

6. LEPTANDRA.

LEPTANDRA VIRGINICA. *Nutt.* *Leptandra.*

Stem erect, smooth ; leaves in whorls of from four to six ; spikes terminal.

Syn. VERONICA VIRGINICA. *L.*

A tall plant with white spikes and verticillate leaves. Stem erect, five feet high, smooth. Leaves whorled, lanceolate, uncinately serrate, pubescent beneath. Spikes axillary and terminal, of two or three hundred flowers, which are nearly sessile, with acute bracts. Calyx of five acute leaves, three of them external. Corolla white, tubular with four cordate acute segments, villous inside. Stamens twice as long as the corolla, with hairy filaments.—Connecticut.—July.—Perennial.

7. GRATIOLA.

GRATIOLA AUREA. *Muhl.* *Hedge Hyssop.*

Smooth ; leaves linear-oblong, with few teeth, half clasping ; sterile filaments minute.

Syn. GRATIOLA OFFICINALIS. *Mich.*

Stem smooth, upright or ascending at base, half a foot high. Leaves opposite, sessile, somewhat clasping, smooth, dotted un-

der a magnifier, oblong-lanceolate, with a slight tooth or two on each side toward the end. Peduncles axillary, alternate, slender. Calyx leaves seven, linear-lanceolate, two of them external, perhaps more properly bractes. Corolla irregular, yellow, its tube curved, and hairy within. Filaments four, inserted in the sides of the corolla, the two sterile ones minute. Style long, persistent.—Borders of ponds and muddy places.—September.

8. LINDERNIA.

LINDERNIA PYXIDARIA. *Pursh.* *Common Lindernia.*

Smooth; leaves oblong ovate, obsolete toothed, sessile; peduncles axillary, one flowered; corolla twice as long as the calyx; capsule shorter than the calyx.

Syn. GRATIOLA ANAGALLIDEA. *Mx.*

LINDERNIA DILATATA. *Muhl.*

Stem square, smooth. Leaves opposite, closely sessile, ovate, hardly toothed. Peduncles axillary. Calyx leaves five, linear, acute. Corolla pale blue, the upper lip very short, the lower of three deflexed roundish lobes. Capsule oblong, acute.

It is a small annual plant, variable in habit, found in damp rich soils, flowering in the latter part of summer.

9. UTRICULARIA.

UTRICULARIA VULGARIS. *L.* *Bladder wort.*

Floating; nectary conical; scape with few flowers.

An aquatic plant, appearing above water only with its stalk and flowers. The roots are slightly fixed to the mud at bottom, the rest of the plant floats in the water by means of numerous small air bladders attached to its immersed portions. Stem and peduncles round, shining. Bractes ovate, scarious. Calyx of two ovate concave leaflets, the lower one widest and sometimes bifid. Corolla yellow, personate, the upper lip irregularly ovate, the lower with a projecting palate veined with brown. Spur of the nectary striated with parallel angular lines, curved upward, as long as the lower lip, acute, sometimes emarginate. Stamens two attached to the upper lip near its insertion, short,

incurved. Germ globular, style clavate, stigma concave, membranous, incurved against an opposite tooth.

This is exactly the *U. vulgaris* of Europe by Sowerby's figure. The horn is sometimes acute and emarginate in the same plant, and sometimes furnished with lateral teeth.—Ditches and stagnant waters.—June, July.—Perennial.

UTRICULARIA CORNUTA. *Max.* *Horned Utricularia.*

Scape rooting, erect, slender, rigid; flowers two or three, subsessile; lower lip of the corolla very wide, three lobed; spur porrected, very acute.

A terrestrial species, never floating. Scape erect, straight, filiform, round, smooth, leafless; furnished with ovate, acute, appressed scales. Flowers two or three, at the top on very short peduncles, yellow, issuing from between three acute bractes of which one is larger and ovate, the two others linear. Calyx of two leaves which are ovate, acute, and yellowish. Upper lip of the corolla reflexed, roundish, yellow; lower lip much larger, inflated, emarginate, with a small projecting terminal lobe. Spur as long as the upper lip, rigid, acute, slightly curved.

Wet grounds, Sandwich, Chelmsford, &c. Sometimes so abundant as to give the ground a yellow appearance at a distance

UTRICULARIA INFLATA. *Walt.* *Whorled bladder wort.*

Floating, leaves whorled, inflated; pinnatifid at the extremity.

Syn. UTRICULARIA CERATOPHYLLA. *Max.*

Stem slender, with vesicular roots or fibres. At the surface of the water is a single whorl of about six oblong inflated leaves, branched at the extremity. Flowers three or four on a stem pedunculated, with sheathing bractes, yellow. Upper lip roundish, mostly entire. Lower lip three lobed, its inflated portion small. Spur short, compressed, obtuse, appressed to the corolla, three striate, emarginate.—Ponds, Charlestown.—August.

UTRICULARIA PURPUREA. *Walt.* *Purple bladder wort.*

Floating; scapes mostly one flowered; spur flattened, appressed to the lower lip and half its length.

Bractes sheathing. Calyx obtuse, gibbous. Flowers purple, yellow inside. Upper lip entire, lower lip much inflated, three lobed, its middle lobe pressed upward by the spur, which is short, greenish, obtuse, and bending upward, compressed transversely, not carinate, and shorter than the upper lip. Sent from Danvers by Dr. Nichols.—August.

10. LYCOPUS.

LYCOPUS EUROPEUS. *L.* *Water horehound.*

Lower leaves cut, upper leaves lanceolate, serrate; calyx acuminate-prickly.

Stem square; leaves opposite, lower ones deeply, upper ones more slightly toothed. Flowers in whorls. This plant, as Dr. Smith observes, resembles the mints, but has no aromatic smell.—Wet ground, flowering all summer.—Perennial.

LYCOPUS VIRGINICUS. *L.* *Virginian Water horehound, Bugle weed.*

Leaves broad lanceolate, serrate, narrowed at base; calyx shorter than the seed, not prickly.

Stem obtusely quadrangular. Leaves opposite, smooth, variously toothed. Flowers in small whorls, the calyx short and unarmed. Between this and the preceding there are all intermediate varieties.—Wet grounds.—July, August.—Perennial.

This plant has had much popular reputation as a temporary remedy in hæmoptysis, a disease which it is more easy to arrest for a time, than to prevent permanently.

11. MONARDA.

MONARDA ALLOPHYLLA. *Mich.* *Soft Monarda.*

Leaves oblong, sharply serrate; head terminal; calyx bearded at the edge; corollas slender, elongated.

Syn. *MONARDA OBLONGATA. Ait.*

Stem square, commonly purple or spotted, two feet high; leaves soft and downy, dotted under a magnifier, rounded at base, serrate on the sides, entire towards the point. Petioles and smaller branches downy. Bractes and calyces ciliate. Flowers, in terminal heads, blue or flesh coloured. Corolla downy, upper

lip linear, lower lip with two lateral lobes and a linear middle segment. Style longer than the stamens; stigma bifid.—Chelsea beach island. Waltham.—July, August.—Perennial.—The taste of the whole plant resembles that of thyme.

A second variety has deep purple flowers and bractes of the same colour; leaves a little more villous. This appears to be the *M. Kalmiana* of Pursh. I am inclined with Michaux to consider many of the supposed species as mere varieties.

12. CUNILA.

Subgenus HEDEOMA. *Calyx gibbous at base—fertile stamens as long as the corolla.*

CUNILA PULEGIOIDES.

Pennyroyal.

Leaves oblong, few toothed; flowers whorled.

Syn. HEDEOMA PULEGIOIDES. Pers.

A well known pungent and strong scented plant. Leaves opposite; lanceolate-oval, with a few teeth on each side. Flowers in numerous whorls; calyxes with the upper lip ending in three points, the lower in two bristles.

This plant, having found its way into England, was described as a new species of mint, under the name of *mentha exigua*, until Dr. Smith detected the error.

In dry grounds.—July, August.—Annual.

13. COLLINSONIA.

COLLINSONIA CANADENSIS.

Horse weed.

Leaves heart-ovate; stem smooth; teeth of the calyx subulate, shorter than the tube.

Plant three or four feet high. Stem smooth, furrowed on four sides, slightly pubescent. Leaves opposite, very large, serrate and acuminate, the lower ones on long petioles, the upper pair sessile. Panicle terminal, its branches opposite. Flowers dull yellow; lower lip of the corolla fringed. Stamens distant, slender, very long. Style very long, dark purple; stigma bifid.—Roxbury, road side.—July, August.—Perennial.

14. CIRCÆA.

CIRCÆA LUTETIANA. L. *Enchanter's nightshade.*

Stem erect ; leaves ovate, slightly toothed, opaque, pubescent.

Syn. CIRCÆA CANADENSIS. Muhl.

Stem round ; leaves opposite. Flowers in terminal racemes ; petals inversely heart shaped, reddish white ; capsules roundish, covered with minute hooks ; stalks of the capsules bent backward.—Moist woods, particularly on Chelsea beach island.—June, July.—Perennial.

CIRCÆA ALPINA. L. *Alpine enchanter's nightshade.*

Stem branched ; leaves broad-heart shaped, membranous, toothed.

A smaller and more humble plant than the preceding, with very distinct heart shaped leaves. Capsules reflexed, pubescent.—In old woods.—July.—Perennial.

Class III. TRIANDRIA. *Three stamens.*Order 1. MONOGYNIA. *One style.*A. *Flowers superior.*

15. IRIS. Corolla six parted, the divisions alternately reflected ; stigmas petal form.

B. *Flowers inferior.*

16. XYRIS. Corolla three petalled ; calyx two valved ; capsule three celled.

C. *Flowers grassy.*

17. SCHÆNUS. Corolla none ; calyx of fascicled, chaffy scales ; seed one, roundish.

18. *CYPERUS*. Corolla none; calyx of chaffy scales imbricate two ways; seed mostly naked.

19. *SCIRPUS*. Corolla none; calyx of chaffy scales imbricate every way; seed mostly naked.

20. *ERIOPHORUM*. Corolla none; calyx of imbricate scales; seed invested with long woolly hair.

21. *SPARTINA*. Calyx two valved, compressed, one valve larger, longer, and carinated; corolla two valved.

22. *ORYZOPSIS*. Calyx two valved, the valves obovate, one flowered; corolla two valved, the outer one awned; nectary two leaved.

Order II. *DIGYNIA*. Two styles.

A. Flowers scattered, one in each calyx.

23. *MILIUM*. Calyx two valved, the valves ventricose, nearly equal; corolla two valved, mostly shorter than the calyx.

24. *ALOPECURUS*. Calyx two valved, one flowered; corolla one valved; flowers spiked.

25. *TRICHODIUM*. Calyx two valved, one flowered; corolla one valved, awnless; flowers paniced.

26. *MUHLENBERGIA*. Calyx minute, one valved; corolla two valved, hairy at base, outer valved awned at the tip.

27. *ANTHOXANTHUM*. Calyx two valved; corolla two valved, acuminate, awned; stamens two.

28. *PHLEUM*. Calyx two valved, one flowered, sessile, linear, truncate, ending in a point, inclosing, and longer than the corolla.

29. *AGROSTIS*. Calyx two valved, one flower-

ed ; the valves acute ; corolla two valved, unequal, larger than the calyx.

30. CINNA. Calyx two valved, one flowered ; corolla linear, naked at base ; *stamen one*.

31. LEERSIA. Calyx none ; corolla two valved, closed.

32. PHALARIS. Calyx two valved, the valves carinate, equal ; corolla two valved, included, hairy at base. Rudiments resembling valves.

33. ARISTIDA. Calyx two valved, corolla one valved with three terminal awns.

34. STIPA. Calyx two valved ; corolla two valved, the valves involute, truncate ; awn terminal, very long, twisted at base.

B. *Flowers more than one in each calyx.*

35. AIRA. Calyx two valved, two or three flowered without the rudiment of an additional flower ; corolla two valved.

36. UNIOLA. Calyx many valved ; spikelet ovate, carinate.

37. DACTYLIS. Calyx of two valves, many flowered, one of the valves larger, longer, compressed, carinate.

38. AVENA. Calyx two valved, many flowered, with a twisted awn on the back.

39. POA. Calyx two valved ; spikelet rounded at the base ; corolla two valved, the valves ovate, somewhat acute, awnless.

40. BRIZA. Calyx two valved ; corolla inflated, its valves heart-shaped, mostly obtuse.

41. FESTUCA. Calyx two valved ; spikelet oblong, roundish, with pointed glumes.

42. **BROMUS.** Calyx two valved ; spikelet oblong, roundish, two ranked ; awn from below the top of the valves.

43. **ARUNDO.** Calyx two valved ; corolla woolly at the base, awnless.

C. *Flowers polygamous.*

44. **PANICUM.** Calyx of two very unequal valves, containing two flowers, the outer one barren ; corolla cartilaginous, investing the seed.

45. **ANDROPOGON.** Flowers double ; one pedicelled, barren ; the other sessile, containing two florets, one barren, the other perfect, its corolla furnished with a twisted awn.

46. **HOLCUS.** Calyx two valved, two or three flowered ; corolla two valved, barren floret mostly awned.

D. *Flowers spiked on a long slender receptacle.*

47. **LOLIUM.** Calyx one valved, many flowered.

48. **TRITICUM.** Calyx two valved, many flowered.

49. **ELYMUS.** Involucre four leaved, two flowered ; flowers compound.

50. **HORDEUM.** Involucre six leaved, three flowered ; flowers simple.

Order III. **TRIGYNIA.** *Three styles.*

A. *Flowers inferior.*

51. **LECHEA.** Corolla three petalled ; calyx three leaved ; capsule three celled, three valved.

52. **MOLLUGO.** Corolla none ; calyx five leaved ; capsule three celled.

B. *Flowers superior.*

53. PROSERPINACA. Corolla none; calyx three parted; seed one, three celled.



TRIANDRIA.

MONOGYNIA.

15. IRIS.

IRIS VERSICOLOR. *L.*

Blue Flag.

Bigelow, Medical Botany, Pl. xvi.

Leaves ensiform, stem acute on one side, capsules oblong, three sided, with obtuse angles.

Syn. IRIS VIRGINICA. 1st edit.

The most common and showy ornament of our meadows in the early part of summer. The root is fleshy, horizontal, sending down a multitude of fibres. Stem two or three feet high, round on one side, acute on the other, frequently branched, and bearing from two to six flowers. Leaves sword shaped, striated, sheathing at base. Bractes becoming scarious. Peduncles of various length, flattened on the inside. Germ three cornered, with flat sides and obtuse angles. Outer petals of the flower spatulate, beardless, the border purple, the claw variegated with green, yellow, and white, and veined with purple. Inner petals erect, varying in shape from spatulate to lanceolate, usually paler than the outer, entire or emarginate. Style short, concealed; stigmas three, petal-form, purple or violet, resting on the outer petals, their extremities bifid, crenate, and more or less reflexed; their lower lip short. Stamens concealed under the stigmas with oblong-linear anthers. Capsule three celled, three valved; when ripe, oblong, turgid, three sided, with roundish angles. Seeds numerous, flat.

Borders of swamps and wet meadows.—June.—Perennial.—The root is a violent emetic.

The *Iris Virginia* of Linnæus, characterized by an ancipital stem and ensiform leaves, is probably identical with this species.

IRIS PRISMATICA. Pursh.

Boston Iris.

Iris imberbis; *foliis linearibus*; *caule tereti*, *plurifloro*; *germinibus trigonis*, *lateribus trisulcis*.

Flowers beardless; leaves linear; stem round, many flowered; germs triangular, twice grooved on the sides.

Syn. IRIS GRACILIS. 1st edit.

IRIS VIRGINICA. Torrey.

This plant was first described by me in the former edition of this work under the name of *I. gracilis*. Two years afterwards Mr. Pursh gave it the name of *I. prismatica*, which name I am willing to adopt, the other having since been bestowed on an African plant. When I sent it to the late Dr. Muhlenberg, he at first pronounced it *I. Virginia*, but afterwards agreed that it was new. Having a round stem and linear leaves, it certainly wants the Linnæan characteristics of *I. Virginia*. Its best distinctive character is the doubly grooved germ, which Pursh has overlooked.

Root fleshy, sending out short runners from which new plants arise; stem round, smooth, slender, from one to two feet high, branching at top, bearing several alternate leaves, and from two to eight flowers. Leaves linear, erect, sheathing at their base. Bractes or involucre close, becoming dry. Peduncles flattened on the inside, varying in their proportions to the bractes, but commonly longer. Outer petals slender, spreading, purple at the edge, yellow and veined in the middle, the yellow portion much greater than in the last species. Inner petals lanceolate, slightly emarginate. Germs oblong, three sided; sides with two deep parallel grooves, the whole representing a cylinder with three smaller ones attached to its sides. As the germ enlarges, the distance between the two furrows does not increase, and they are nearly obliterated in the capsule, which is triangular and turgid with its three rows of seeds.

Found at South Boston and Cambridge in the same places with *Iris Virginia*, but much less frequent.—June.—Perennial.

16. XYRIS.

XYRIS JUPICAL. *Mich.**Yellow eyed grass.*

Leaves linear, somewhat obtuse; scape near the head dilated, two edged; scales rounded.

Syn. XYRIS CAROLINIANA. Lam. Poir.

Root bulbous; leaves grassy, shorter than the scape; scape erect, two edged, twisted, a little widened at top. Heads roundish, rather acute, supporting a number of small yellow florets projecting out of the scales, hairy within, and consisting of three ovate, crenate petals.—Meadows.—July, August.—Perennial.

17. SCHÆNUS.

SCHÆNUS MARISCOIDES. *Muhl.**Water Bog rush.*

Culm round; leaves channelled; umbel terminal, spikes fascicled.

A firm rush a foot or two high. Leaves half cylindrical, channelled. Fascicles about three together, each containing a dozen lanceolate, brown spikes.—Edges of Fresh pond.—July.—Perennial.

§ *Subgenus RHYNOSPORA. Seed surrounded with bristles—style persistent.*

SCHÆNUS ALBUS. *L.**White headed Bog rush.*

Culm three sided, leafy; flowers fascicled; leaves setaceous.

Syn. RHYNOSPORA ALBA. Vahl.

A smooth, grassy plant, with white heads of flowers. Stem half a foot or more in height, three sided, mostly smooth. Leaves mostly belonging to the stem, alternate, sheathing, the sheaths tubular or entire. Flowers in fascicles on footstalks, terminal and axillary, erect. Glumes white, afterward becoming brownish. Seeds surrounded with short hairs.—In low woods and swamps.—Brighton.—July.—Perennial.

18. CYPERUS.

CYPERUS INFLEXUS. *Muhl.* *Inflected Cyperus.*

Heads roundish, glomerate ; spikelets linear, about eight flowered ; glumes squarrose at the tip.

Syn. CYPERUS UNCINATUS. *Pursh.*

Two or three inches high, with soft, crowded, ascending, slender spikelets ; the glumes recurved at the tip.—Wet grounds.—August.

CYPERUS FLAVESCENS. *L.* *Yellow Cyperus.*

Spikelets linear-lanceolate, crowded, three or four together ; involucre three leaved, longer than the umbel.

Spikelets from fifteen to twenty flowered, yellowish green.—Wet grounds.—August, September.—Perennial.

CYPERUS CASTANEUS. *Chesnut Cyperus.*

Spikelets ovate-lanceolate, involucre three leaved, longer than the umbel.

Syn. CYPERUS FLAVESCENS, β . CASTANEUS. *Pursh.*

Smaller than the preceding ; spikelets broader, chesnut coloured, fifteen to twenty flowered.—Wet grounds.—August.

CYPERUS DIANDRUS. *Torrey.* *Diandrous Cyperus.*

Umbel sessile, or one to two rayed, shorter than the involucre ; spikelets oblong-lanceolate, about fifteen flowered ; stamens two.

From eight to twelve inches high, the umbel sometimes resembling a small panicle.—Wet grounds and salt marshes.—September.

CYPERUS DENTATUS. *Torrey.* *Toothed Cyperus.*

Umbel compound, six to ten rayed, shorter than the involucre ; spikelets three together, ovate compressed, eight flowered.

Syn. CYPERUS PARVIFLORUS. *Muhl.*

Ten or twelve inches high. Spikes very much compressed,

the tips of the glumes spreading so as to give a serrate appearance to the edge as remarked by Dr. Torrey—Edges of water.—September.

CYPERUS STRIGOSUS. *L.* *Narrow spiked Cyperus.*

Spikelets linear, spreading or reflexed, ten or twelve flowered; root globose.

A foot or more in height. Umbel mostly simple, the spikelets numerous, narrow, and inserted into their common stalk nearly at right angles.—Low grounds.—August, September.—Perennial.

CYPERUS MARISCOIDES. *Ell.* *Tuberous Cyperus.*

Umbel simple with one or two rays; spikelets seven or eight flowered, collected into dense spherical heads; root globose.

Eight or ten inches high. Root a solid bulb. Spikelets crowded into hard, dense heads.—Plentiful on the barren sand in the lower part of Watertown.—July, August.—Perennial.

§ *Subgenus* DULICHIMUM. *Spikelets racemed, style bifid.*

CYPERUS SPATHACEUS. *L.* *Sheathed Cyperus.*

Culm round, leafy; leaves alternate, with entire sheaths; racemes axillary and terminal.

Syn. SCIRPUS SPATHACEUS. *Mich.*

DULICHIMUM SPATHACEUM. *Reichard.*

A tall leafy grass. Stem smooth, hardly three sided, covered with numerous, short, flat, smooth, spreading leaves, proceeding from sheaths which are perfectly entire or tubular, the part opposite the leaf ending in a rounded point. The lower leaves, not the sheaths, are deciduous. Racemes mostly axillary. Peduncle compressed, bearing from five to eight alternate, sessile, narrow spikelets of about six flowers. Glumes two ranked. Seeds surrounded with hairs.—Borders of ponds and rivers.—August.—Perennial.

19. SCIRPUS.

§ *Subgenus* ELEOCHARIS. *Seed surrounded with bristles—style articulated to the seed, conical and persistent.*

SCIRPUS TENUIS. *Muhl.* *Slender Club rush.*

Culm filiform, quadrangular, leafless; spike terminal, oval, acute at both ends; glumes obtuse; stamens three, styles three cleft.

A slender, leafless, acute-angled species.—Common in wet grounds and shallow water.—May, June.

SCIRPUS PALUSTRIS. *L.* *Marsh Club rush.*

Culm rounded, inflated; spike terminal, oblique, oblong, acute; glumes acute; root creeping.

Culms stout, slightly compressed, many from the same root, a foot high, leafless, with blunt sheaths at base. Lower glumes larger.—Wet meadows and ditches.—July.—Perennial.

SCIRPUS CAPITATUS. *Willd.* *Headed Club rush.*

Culm roundish; spike terminal, roundish ovate, obtuse, seed smooth:

Distinguished from the foregoing by its obtuse and almost globular heads.—Small ponds, &c.—July.

SCIRPUS TRICHODES. *Muhl.* *Hair Club rush.*

Culm setaceous compressed, grooved; spike terminal, ovate, acute, naked, stamens three, style bifid.

An exceedingly slender and hair-like species, three or four inches high, related to *S. acicularis* of Europe, and considered by Dr. Torrey to be identical with it.—About shallow water.—July.

SCIRPUS PLANIFOLIUS. *Muhl.* *Flat leaved Club rush.*

Culm triangular; leaves linear, flat, about equal to the culm; spike terminal, oblong, compressed, shorter than its bractes.

A small species in wet grounds, the radical leaves as high as the culm. Bractes cuspidate, the outer one longer than the spike.—May, June.

SCIRPUS CÆSPITOSUS. *L.* *Scaly Club rush.*

Culm rounded, sheathed at base with rudiments

of leaves ; spike terminal, the two outer glumes as long as the spike.

Var. β . *callosus*. The two outer glumes obtuse and fleshy at the tips.

A low plant with very small spikes. The truncated glumes with fleshy whitish tips, had led me to consider this a distinct species, until I received similar specimens from Europe.—On the White mountains.—July.—Perennial.

§§ *Subgenus SCIRPUS*. Seed surrounded with bristles—style filiform, deciduous.

SCIRPUS AMERICANUS. Pers. *Three sided Club rush*.

Culm nearly naked, triangular ; spikes few, lateral, conglomerate sessile ; glumes round-ovate, mucronate.

Syn. SCIRPUS TRIQUETER. Mx.

Culm two or four feet high, sharply three cornered with concave sides. It resembles *S. triqueter* of Europe, very much, but the spikes are fewer and farther from the top.—Salt marshes.—July.—Perennial.

SCIRPUS DEBILIS. Pursh. *Weak stemmed Club rush*.

Culm round, striated ; spikes few, lateral, crowded, sessile, short-ovate.

About a foot high ; glumes broad, carinate.—Wet ground and edges of ponds.—August.—Perennial.

SCIRPUS MARITIMUS. L. *Sea Club rush*.

Culm triangular, panicle clustered, leafy, terminal ; glumes pointed, torn into three segments.

Syn. SCIRPUS MACROSTACHYUS. Lam. Muhl.

SCIRPUS ROBUSTUS. Pursh.

Culm erect, smooth, one or two feet high, leafy at base. Leaves linear, acute, rough on the margin. Bractes or floral leaves several, very unequal in length. Panicle resting on these, crowded, consisting of large sessile and pedunculated spikes, ovate, conspicuous by their dull, chesnut colour and yellow anthers. The glumes are ovate, shining, slightly carinated. divid-

ed into three small segments at tip, the middle one of which is prolonged into a short, setaceous awn.—Salt marshes and ditches.—July.—Perennial.

I do not discover sufficient grounds to separate this from the European plant.

SCRIPUS ACUTUS. *Muhl.*

Pointed Bullrush.

Culm round, leafless, equal; spikes several, below the top, oblong, somewhat umbelled.

Syn. SCIRPUS VALIDUS. Pursh?

SCIRPUS LACUSTRIS. Torrey?

This nearly resembles the large bullrush, (*Scirpus lacustris*) but differs in its fructification, which is lateral, never terminal. Culm sheathed at base, erect, round, smooth, naked, filled with light, spongy pith, often spotted, five or six feet high, uniform in size for a great part of its length, ending in an acute point. Spikes several, in a cyme or umbel about an inch below the tip, oblong and closely imbricate. Peduncles rough, compressed, unequal; scales ovate, mucronate, scarious at the edges, pubescent.—In deep water at Fresh Pond and elsewhere.—June, July.—Perennial.

This is the largest rush in this vicinity. The name *acutus* was given it by Muhlenberg.

§§§ Subgenus TRICHOPHORUM. *Seed surrounded with bristles much longer than itself. Style filiform, deciduous.*

SCRIPUS ERIOPHORUM. *Mich.*

Red Cotton grass.

Culm obtusely triangular, leafy; panicle decom-
pound, proliferous, nodding.

Syn. ERIOPHORUM CYPERINUM. L. and first edit.

TRICHOPHORUM CYPERINUM. Pers.

A common, rank, tall, meadow grass. Culm smooth, strong, roundish, compressed on three sides. Leaves very long, rough at the edge. Panicle terminal, umbelled, nodding, proliferous, with a long leafy involucre. Spikelets in heads very numerous, small, ovate, covered by the red, projecting, woolly hairs.—August.—Perennial.

§§§§ Subgenus ISOLEPIS. *Seed naked at base—style simple, not articulated, deciduous.*

SCIRPUS CAPILLARIS. *L.* *Capillary Club rush.*

Culm capillary, triangular; spikes ovate, two or three pedunculate and one sessile.

A very delicate species, two or four inches high, sending up many stems from a root. Leaves setaceous. Spikes somewhat umbelled, oblong, reddish.—Dry, sandy fields.—August.

SCIRPUS AUTUMNALIS. *L.* *Autumnal Club rush.*

Culm compressed; ancipital; umbel compound; spikes lanceolate, somewhat four sided.

Grows in bunches from five to ten inches high. Leaves flat. Involucre two leaved. Spikes crowded, a few together at the ends of the umbel.—Muddy grounds.—August, October.

20. ERIOPHORUM.

ERIOPHORUM ALPINUM. *L.* *Alpine Cotton grass.*

Culm triangular, naked; leaves shorter than the sheaths; spike solitary, oblong ovate.

A slender species, half a foot high with a single small spike, to which is attached a thin tuft of white crisped hairs. When young, it resembles *Scirpus cæspitosus*.—On the White mountains, N. H.—July.—Perennial.

ERIOPHORUM ANGUSTIFOLIUM. *Willd.* *Narrow leaved Cotton grass.*

Culm somewhat triangular, leaves linear, grooved; spikes many, on smooth stalks.

This species and the following are well known by their white woolly spikes among the meadow grass in summer. This grass has narrow channelled leaves, ending in a triangular point, and simple peduncles.—Wet grounds.—June.—Perennial.

ERIOPHORUM POLYSTACHYON. *L.* *Broad leaved Cotton grass.*

Culms triangular, leaves broad-linear, flat; spikes many, on rough stalks, nodding.

Leaves broader and more flat than in the foregoing; and the wool shorter. Spikes on long drooping peduncles, which are sometimes branched.—Wet meadows.—June.—Perennial.

ERIOPHORUM VIRGINICUM. *L.* *Virginian cotton grass.*

Culms roundish below, three sided above ; spikes nearly sessile, clustered, erect ; involucre two or three leaved.

Leaves very long. Wool of a reddish colour, short.—Wet meadows and swamps.—July.—Perennial.

21. SPARTINA.

SPARTINA CYNOSUROIDES. *Muhl.* *Rough grass.*

Spikes numerous, alternate, or scattered ; peduncles rough ; outer valve of the calyx rough with minute teeth on the back.

Syn. *DACTYLIS CYNOSUROIDES.* *L.*

TRACHYNOTIA CYNOSUROIDES. *Mich.*

Stem three feet high, round and smooth. Leaves very long, smooth, somewhat rough on the margin, the edges convolute when the plant grows near the sea. Spikes numerous, on rough peduncles, given off successively from the three sides of a triangular common stalk. Flowers closely imbricated, in a double row, leaning to one side of their flexuous receptacle. Inner valve of the calyx very small ; outer valve much larger, carinated, and rough with minute prickles on the keel.—Marshes.—August.—Perennial.

SPARTINA JUNCEA. *Muhl.* *Short Rough grass.*

Spikes from one to three ; peduncles smooth ; outer valve of the calyx rough with minute teeth on the back ; leaves convolute-setaceous.

Syn. *TRACHYNOTIA JUNCEA.* *Mich.*

A much smaller grass than the preceding, which it resembles in the form of its spikes. Stem round, smooth, about a foot high. Leaves alternate, somewhat two ranked, acquiring, when rolled up, a filiform appearance. Spikes about two, on smooth stalks, shorter than in the foregoing species, but similar in shape. Outer valve of the calyx nerved, rough on the keel like the last. Anthers purplish.—Salt marshes.—July.—Perennial.

SPARTINA GLABRA. *Muhl.**Ditch grass.*

Spikes numerous, sessile, somewhat imbricated; valves of the calyx mostly glabrous.

A large rank grass, common about muddy shores and in salt water ditches. Stem round, smooth, three or four feet high. Leaves very long, smooth, acute. Spikes ten or a dozen, sessile, lying over each other, with their backs successively applied to the three sides of a long triangular, smooth, common stalk. Flowers closely imbricated, in a double row, leaning outward, as in the former species. Inner valve of the calyx linear. Outer valve many times larger, compressed, and to the naked eye glabrous. Through a glass it is found ciliated on the keel. Anthers straw coloured.—August, September.—Perennial.

22. ORYZOPSIS.

ORYZOPSIS ASPERIFOLIA. *Mx.**Mountain Rice.*

Leaves erect, rigid, pungent at the point; panicle simple.

This grass is remarkable for its large seeds, which, it has been suggested, may render it worthy of cultivation. It is a foot or more in height, with a panicle of a few racemose branches. Seeds greenish white. The single style is the chief character which separates it from some species of milium.—In old woods in the interior.—May.—Perennial.

DIGYNIA.

23. MILIUM.

MILIUM RACEMOSUM. *Sm.**Black seeded Millet grass.*

Panicle simple, its branches racemose; calyx elliptical, acute, ribbed; corolla hairy at base; awn as long again as the valves.

Syn. ORYZOPSIS MELANOCARPA. *Muhl.*PIPTATHERUM NIGRUM *Torrey.*

A tall grass with large black grains. Culm two or three feet high. Leaves long, linear-lanceolate. Panicle of a few long, simple, racemose branches, erect at first, but afterwards spread-

ing. It resembles *Oryzopsis*, but is distinguished by its distinct styles, dark seeds, taller stature, and later period of flowering.—Woods, in the interior of the state.—August.—Perennial.

It may perhaps be found worth cultivation.

MILIUM PUNGENS. *Torrey.* *Dwarf Millet grass.*

Leaves lanceolate, very short, pungent, at length involute ; panicle contracted, branches mostly in pairs, corolla hairy ; awn uncertain.

Culm slender, a foot high, with a few very short leaves. Panicle small, the branches rather erect. Calyx obtuse or truncate. Corolla as long as the calyx, hairy. In all my specimens a part of the flowers have an awn about half as long as the corolla.—Woods, Sudbury.—May.

24. ALOPECURUS.

ALOPECURUS PRATENSIS. *L.* *Common Foxtail grass.*

Culm erect, smooth ; sheaths swelling ; spike cylindrical, obtuse ; calyx glumes acute, connate ; corolla equal to the calyx.

Common foxtail grass is well marked by the upper sheaths which appear as if inflated. Culm two or three feet high. Spike lobed. Calyx acute, villous. Corolla nearly equal to the calyx. Awn twisted.—Fields, &c.—May.

An early, excellent grass, probably introduced.

ALOPECURUS GENICULATUS. *L.* *Floating Foxtail grass.*

Culm ascending, bent at the joints ; spike somewhat compound, cylindrical ; glumes obtuse, hairy. *Sm.*

Stems of various lengths, ascending, forming knees or angles at the joints, and rooting from the lower ones, when the plants grow in the water. Leaves rather smooth and short, their sheaths a little swelling. Spike cylindrical, obtuse, divisible into lobes. Glumes of the calyx obtuse, fringed with long hairs. Corolla awned at base—Ponds and ditches.—July.—Perennial.

25. TRICHODIUM.

TRICHODIUM LAXIFLORUM. *Mich.* *Thin grass.*

Culms erect ; leaves narrow, short ; sheaths somewhat rough. *Pers.*

This grass is readily known by its very thin, spreading, capillary panicle. Stem erect, smooth, slender. Leaves short, glabrous, on roughish sheaths. Panicle consisting of very long, straight, rough branches, of a purplish colour, hardly larger than hairs, and very flexible. These are given off in half whorls, and are repeatedly subdivided into three or four branchlets at a time. Flowers minute, scattered at the ends of the branches. Glumes lanceolate, acute.—Road sides.—July.—Perennial.

26. MUHLENBERGIA.

§ *Subgenus BRACHYELYTRUM. Upper valve of the corolla with a clavate rudiment at base.*

MUHLENBERGIA ERECTA. *Schreb.* *Erect Muhlenbergia.*

Culm erect, simple ; leaves pubescent ; panicle lax ; calyx with a long awn.

Syn. BRACHYELYTRUM ARISTATUM. Beauv.

DILEPYRUM ARISTOSUM. Mx.

A simple slender grass, two or three feet high. Flowers few, remote, long-awned.—On the sides of Wachuset hill.—June.

DIGYNIA.

27. ANTHOXANTHUM.

ANTHOXANTHUM ODORATUM. *L.* *Sweet scented Vernal grass.*

Spike ovate-oblong ; flowers longer than their awns, standing on short stalks.

Stem about a foot high. Leaves short, flat ; sheaths somewhat swelling ; stipule lanceolate, scarious. Spike terminal, solitary ; calyx glumes unequal, rough on the back ; corolla shorter than the calyx, awned on the back.

This grass, when partly faded, is exceedingly fragrant, whence its name. It grows on farms where it was formerly introduced from Europe.—May, June.—Perennial.

28. PHLEUM.

PHLEUM PRATENSE. L. *Herds grass or Cat's tail grass.*

Spike cylindrical, very long; glumes fringed at the back, longer than the awns. *Sm.*

Culm upright, round, smooth. Leaves flat, pointed, rough on the upper side; sheaths long, striated; stipules blunt. Spike long, cylindrical, upright. Calyx of two glumes fringed with hairs on the back, square or truncated at the end, with two short awns.—June, July.—Perennial.

This grass is extensively cultivated, forming a chief constituent of what is with us called English hay. It is usually denominated *herds grass*, and sometimes improperly *fox tail grass*. In England it is known by the name of *cat's tail*, and *Timothy grass*, the last burlesque appellation derived from Mr. Timothy Hanson, one of its early propagators. It is said to have fallen there into disrepute, although its reputation is good in this country. Professor Martyn and Mr. Curtis speak of it as a harsh, coarse grass, in all respects inferior to the true foxtail grass, (*Alopecurus pratensis*.)

29. AGROSTIS.

AGROSTIS VULGARIS. *With. Red top. Fine Bent grass.*

Panicle spreading with divaricated, capillary branches; calyx valves equal; inner petal obtuse, half as long as the other. *Sm.*

A pretty common grass in dry mowing land and pastures, usually entering into the composition of our English hay. Stem erect, smooth, slender, leafy. Leaves narrow, acute, with long sheaths. Panicle erect, red, its branches very numerous and fine, arranged in half whorls, flexuous and variously divided. Flowers numerous and very small. Calyx valves lanceolate, acute, spreading, purple at base, scarious on the margin. Inner valves of the corolla half as long as the outer.—June, July.—Perennial.

AGROSTIS ALBA. L. *White Bent grass.*

Panicle loose; culm creeping; calyx valves equal, lanceolate, polished, rough on the keel. *Sm.*

Stems spreading, ascending, rooting at the lower joints. Leaves rough, their sheaths smooth. Panicle loose, consisting of somewhat distant half whorls, its branches much subdivided and roughish. Flowers lanceolate, shining, white or purplish brown. Valves of the calyx equal, acute, rough on the back only.—Meadows.—June, July.—Perennial.

AGROSTIS CANINA. *L.* *Dogs Bent grass.*

Calyx elongated; corolla with a dorsal, crooked awn; culms procumbent, somewhat branched.

In mowing lands and about the borders of fields, probably from Europe.—July.

AGROSTIS CLANDESTINA. *Muhl.* *Hidden Bent grass.*

Panicle spiked, partly concealed; corolla much longer than the calyx, hairy, slightly awned; leaves rigid, very long.

A long, hard grass with concealed spikes.—Found by road sides and on dry soils.—September.

§ *Subgenus* POLYPOGON. *Calyx and corolla terminating in bristles.*

AGROSTIS RACEMOSA. *Mich.* *Racemed Bent grass.*

Panicle dense, interrupted; bristles of the calyx scabrous; corolla awnless, hairy at base; culm branched.

Syn. POLYPOGON RACEMOSUS. *Nuttall.*

Culm compressed, erect. Leaves erect, rigid. Panicle formed of many conglomerated spikes.—In wet meadows.—August.—Perennial.

30. CINNA.

CINNA AURUNDINACEA. *L.* *Reedy Cinna.*

Panicle large, capillary, loose; culm smooth; leaves broad linear.

Syn. AGROSTIS CINNA. *Schreb.*

A large rank grass, three or four feet high, resembling some

species of *Arundo*, and differing from most other grasses in having a solitary stamen in each flower.—Wet shady grounds.—August.—Perennial.

31. LEERSIA.

LEERSIA ORYZOIDES *Swartz.* *Cut grass.*

Panicle loose ; spikelets triandrous ; keel of the glumes ciliate. *Sw.*

Syn. PHALARIS ORYZOIDES. *L.*

Stem about two feet in height. Leaves exceedingly rough backward, so as to cut the hands if drawn across them ; narrow, on long rough sheaths. Panicle erect, spreading, with slender, rough branches. Flowers very distinguishable by their oval figure and white colour. Glumes of the corolla compressed, the two valves shut together, so as to assume an elliptical form, with the curvature on one side greatest. Keel of the valves ciliated, giving the circumference of the flower a fringed appearance.—Wet places.—August.—Perennial.

LEERSIA VIRGINICA. *Willd.* *Virginian Cut grass.*

Panicle simple ; flowers monandrous, sparingly ciliate on the keel.

Smoother than the preceding species, the flowers considerably smaller and less ciliate, white.—Damp woods, Oak island.—August.

32. PHALARIS.

PHALARIS AMERICANA. *Ell.* *American Canary grass.*

Panicle oblong, spiked ; glumes of the calyx boat-shaped, serrulate ; corolla unequal ; rudiments hairy,

Syn. PHALARIS ARUNDINACEA. *Mc.*

CALAMAGROSTIS COLORATA. *Nutt.*

A large, rank, aquatic grass, three or four feet high with a panicle of pubescent flowers.—In Muddy brook, near Jamaica plain road.—July.

33. ARISTIDA.

ARISTIDA DICHOTOMA. *Mx.* *Forked Aristida.*

Cespitose ; culms dichotomous ; flowers subspiked ; lateral awns very short, the intermediate one contorted.

A slender grass with short, lateral branches and setaceous leaves. Spikes or racemes slender, with twisted awns.

Road sides in gravelly soils.—September.

34. STIPA.

STIPA AVENACEA. *L.* *Feather grass.*

Leaves striated, smooth ; panicle spreading somewhat one sided, its branches verticillate ; calyx as long as the seed ; awn naked, finally contorted.

Remarkable for the length of its awns. Culm two or three feet high, slender, naked above. Leaves narrow, smooth below, inclining to roll up. Panicle long, few-flowered, nodding when young. Glumes of the calyx nearly equal, acuminate. Corolla stipitate, its lower valve terminating in a twisted awn two or three inches long, at first straight, but at length contorted. Seed a third of an inch long. Dry woody hills near the Andover turnpike, Medford.—June, July.—Perennial.

35. AIRA.

AIRA FLEXUOSA. *L.* *Wood Hair grass.*

Panicle spreading, trichotomous ; peduncles flexuous, awns geniculate ; leaves setaceous, culm nearly naked.

A tall thin grass found in old woods, one or two feet high. Glumes membranaceous, purplish. Corolla with a bent awn near the base.—Sides of Wachusett hill,—June.

AIRA TRUNCATA. *Muhl.* *Truncate Hair grass.*

Panicle oblong, racemose ; calyx unequal, three flowered, one abortive ; lower glume obtuse, corolla glabrous.

Syn. *KOELERIA TRUNCATA.* Torrey.

Woods, Watertown.—June.

36. UNIOLA.

UNIOLA SPICATA. L.

Spike grass.

Somewhat spiked ; leaves involute, rigid. L.

A common grass of the salt marshes. Stem a foot high, round, smooth. Leaves of the stem numerous, short, smooth, increasing in frequency upward, the upper ones hardly an inch apart, rolled up so as to acquire a setaceous form, commonly investing, and often overtopping the spike. Spike irregular, about an inch long, consisting of ten or a dozen small, compressed, crowded spikelets. Glumes flattened, sharp on the back.—July.—Perennial.

37. DACTYLIS.

DACTYLIS GLOMERATA. L.

Orchard grass.

Panicle crowded, leaning one way. Sm.

Root perennial. Culms round, rough toward the top. Leaves very rough. Stipules cloven or torn. Panicle of flowers consisting of close bunches on rough and rigid peduncles; leaning toward one side. Calyx pubescent and rough, the inner valve twice as large as the outer, and shortly awned.—June.—Perennial.

A coarse, but extremely hardy and productive grass, said to be much more luxuriant here than in Europe.—By fences, thickets, &c.—June, July.

38. AVENA.

§ *Subgenus* DANTHONIA. Lower valve of the corolla two toothed, with the awn between.

AVENA SPICATA. L.

Spiked Oat grass.

Panicle simple, few flowered ; spikelets six or seven flowered, shorter than the calyx ; lower valve of the corolla hairy ; leaves subulate, the lower ones hairy at the neck.

Syn. DANTHONIA SPICATA. Nutt.

A common grass in dry sunny pastures. Culm a foot high, slender, with short setaceous leaves. Calyx nerved, acute, longer than the spikelet. Outer valve of the florets ending in two bristles or teeth with a contorted awn between them.—June.—Perennial.

§§ *Subgenus ARRHENATHERUM. Calyx two flowered, one barren and awned.*

AVENA ELATIOR. L.

Tall Oat grass.

Panicle equal, nodding; awn twice as long as the flower; culm geniculate, smooth; root nodose.

Syn. HOLCUS AVENACEUS. Sm.

ARRHENATHERUM AVENACEUM. Beauv.

A large valuable grass introduced by cultivation from Europe. Panicle lax with brownish spikelets. Awn of the barren flower much twisted.—Naturalized in some parts of the state.—June.

39. POA.

POA PRATENSIS. L.

Common Spear grass.

Panicle spreading; spikelets of four flowers; glumes lanceolate, five nerved, connected by a web; stipule short and blunt. *Sm.*

Spear grass or meadow grass is found in all situations, constituting a considerable portion of the common turf in pastures, road sides, &c. Culms leafy, slender, smooth, often stoloniferous. Leaves spreading, blunt, with obtuse or truncated stipules. Panicle large, loose, of horizontal fine branches, bearing many ovate spikelets of about four flowers.—June.—Perennial.

This is an excellent and useful grass.

POA COMPRESSA. L.

Blue grass.

Panicle condensed, its branches leaning one way; erect, before and after flowering. Culm ascending, compressed. *Sm.*

Root creeping. Stem decumbent at base, erect above, very much compressed, whence the name. Leaves commonly glau-

cous, narrow, with long sheaths. Panicle erect, crowded, tending to one side, obtuse; its branches short and rough, appressed to the stem except at the time of flowering. Spikelets ovate. Florets closely imbricate, varying in number, connected at base by a thin web.—Dry grounds.—July, August.—Perennial.

POA ANNUA. L. *Annual Spear grass.*

Panicle divaricated; spikelets ovate; florets a little remote, five ribbed, destitute of a web; stem oblique, compressed. *Sm.*

A smaller grass but equally common with the first. It is annual in duration, but rapid in increase, and commonly the first grass to appear on new grounds. Culms smooth, flattened, spreading obliquely. Leaves flaccid, obtuse, their margin waved in the middle. Stipules sharp. Panicle erect, with its branches depressed when old.

POA NERVATA. Willd. *Meadow Spear grass.*

Panicle diffuse, weak, nodding, spikelets five flowered; florets seven nerved, obtuse.

A tall slender meadow grass, the panicle commonly nodding, the spikelets small and purplish.—Wet grounds.—July.—Perennial.

POA AQUATICA. β. *Tor.* *Water Spear grass.*

Panicle erect, diffuse, its branches flexuous, smooth; spikelets linear, six to eight flowered; florets ovate, obtuse; leaves broad linear, smooth.

A tall rank reedy grass, four or five feet high, with a panicle nearly a foot long.—Wet soils.—August.

POA MARITIMA. *Sea Spear grass.*

Panicle branched, somewhat crowded; spikelets cylindrical, about five flowered, leaves involute, root creeping.

About a foot high, rigid and glaucous. Panicle erect, spikelets linear, nerved. When in flower this grass has a beautiful

glaucous or purplish appearance.—Salt marshes, Cambridge, Dorchester.—June.—Perennial.

POA OBTUSA. *Muhl.* *Obtuse Spear grass.*

Panicle ovate, contracted, spikelets ovate, tumid, five to seven flowered; corolla ovate, smooth, obtuse; leaves smooth, as long as the culm.

An aquatic poa with a small dense panicle of large swelling spikelets.—Borders of Fresh Pond.—August.

POA HIRSUTA. *Max.* *Hair Spear grass.*

Panicle very large, loose, capillary; bearded in the axils; spikelets about five flowered; culm erect, compressed; sheaths hairy.

An elegant grass, with a capillary branching panicle a foot or more in length. Sheaths very hairy. Leaves linear, flat, nerv-ed. Branches of the panicle straight, hairlike. Spikelets oblong, purple.—Dry soils.—August.

POA CAPILLARIS. *L.* *Capillary Spear grass.*

Panicle very large, loose, capillary; not hairy; spikelets about three flowered, ovate, acute.

Resembles the preceding which is perhaps only a variety of this. Pursh states that this plant is very subject to variation. The chief distinction of this seems to consist in its smaller size and its panicles not being hairy in the axils.—Dry grounds.—August.

POA ERAGROSTIS. *L.* *Branching Spear grass.*

Panicle equal, spreading; spikelets oblong, compressed, ten to twenty flowered; florets obtuse.

Syn. BRIZA ERAGROSTIS. *Muhl.*

A very elegant species with a large panicle of sea green spikelets. These are long, tumid, numerous, and remarkably even, the two rows being separated by a nearly straight line.—Sandy soils, rare.—August.

40. BRIZA.

BRIZA CANADENSIS. *Mich.* *Rattlesnake grass.*

Panicle lax, spikelets erect, with from four to ten florets; calyx very small; outer valve of the corollas oval, acute.

A large grass found in meadows and readily recognized by its swelling spikelets. Stem erect, smooth. Leaves rough on the back. Panicle loose, with slender branches, nodding. Spikelets numerous, on distinct footstalks, ovate, erect or nodding. Valves of the calyx short and narrow. Outer valve of the corolla oval, inflated, acute, with a scarious point and margin. Inner valve obtuse.—July.

BRIZA MEDIA. *L.* *Smaller Quaking grass.*

Panicle erect; spikelets cordate, about seven flowered; calyx smaller than the florets.

A light slender grass, a foot high. Spikelets at first ovate, afterwards cordate, shedding the florets easily.—Pastures, South Boston, Dorchester.—June.

Probably introduced from Europe.

41. FESTUCA.

FESTUCA ELATIOR. *L.* *Tall Fescue grass.*

Panicle drooping, spreading loosely every way, much branched; spikelets ovate-lanceolate, acute; florets cylindrical, obscurely ribbed. *Sm.*

Stem three or four feet high, glabrous. Leaves wide and long, smooth, with a rough margin. Panicle large, decompound, loose and nodding. Spikelets numerous, pedunculated, ovate-oblong, acute. Glumes of the calyx unequal, acute, keeled, glabrous. Florets numerous, two ranked, glabrous.—Meadows and thickets.—June.—Perennial.

This is a very productive and useful grass.

FESTUCA TENELLA. *Willd.* *Small Fescue grass.*

Panicle spiked, very simple, secund; spikelets about nine flowered; florets subulate, longer than

the bristles; culm filiform, angular above; leaves setaceous.

A small and exceedingly delicate festuca.—Found in dry pastures at Dorchester.—June.

§ *Subgenus* GLYCERIA. *Corolla unarmed; nectarics collateral connate.*

FESTUCA FLUITANS. L. *Floating Fescue grass.*

Panicle slightly branched, leaning; spikelets linear, eight to twelve flowered; florets very obtuse, seven nerved.

Syn. GLYCERIA FLUITANS. R. Brown.

POA FLUITANS. Smith.

A thrifty aquatic grass, found in wet meadows and the edges of ponds and streams. Stems rooting at base, tall, round, smooth. Leaves flat, smooth, the lower ones loose and floating. Sheaths long, compressed. Panicle very long, nearly erect, with alternate branches pressed near to the stalk. Spikelets linear, round, upright. Calyx unequal, smooth, not very acute. Corollas very obtuse. Anthers short and round. This grass thrives in inundated grounds, and is very grateful to horses and cattle.—June, July.—Perennial.

FESTUCA ACUTIFLORA. *Acute Fescue grass.*

Panicle simple, elongated, appressed; spikelets linear; florets distinct, attenuated, acute, indistinctly nerved.

Syn. GLYCERIA ACUTIFLORA. Torrey.

This grass in size and habit resembles the preceding, but the leaves are shorter, and the glumes of the corollas are attenuated to a sharp point, the upper valve bifid. In my specimens the spikelets are about twelve flowered.—Ditches.—Dorchester.—June.

42. BROMUS.

BROMUS SECALINUS. L. *Rye Brome grass.*

Panicle spreading; peduncles but little branched;

spikelets ovate, compressed, of about ten distinct, somewhat cylindrical florets. *Sm.*

Stem erect, three feet high, smooth. Leaves flat, rough at the edge and underneath, somewhat hairy above. Sheaths smooth. Panicle spreading, its branches rough, unequal, mostly simple, and one flowered. Spikelets large, flattish, nearly oval, of about ten florets. Calyx unequal, smooth. Outer glume of the corolla swelling, with a rough awn inserted at the back a little below the tip.—June.—Perennial.

BROMUS PURGANS. *L.* *Meadow Brome grass.*

Panicle nodding; spikelets lanceolate, terete, florets hairy; bristle straight; leaves smooth, sheaths hairy.

Three or four feet high and somewhat glaucous.—Wet grounds.—July, August.

BROMUS MOLLIS. *L.* *Soft Brome grass.*

Panicle erect, contracted; spikelets oblong-ovate, somewhat compressed, pubescent; bristle straight, nearly as long as the corolla; leaves softly pubescent.

The leaves appear somewhat less soft and the bristle shorter than in the European.—Fields.—June, July.

BROMUS CILIATUS. *L.* *Ciliated Brome grass.*

Panicle nodding, spikelets oblong, terete, eight or ten flowered; glumes acute ciliate; corolla hairy and ciliate; bristles short.

Spikelets rather large and strongly fringed with hairs.—With the foregoing there are intermediate species or varieties difficult to separate.

43. ARUNDO.

ARUNDO CANADENSIS. *Mx.* *Canada reed.*

Panicle oblong-lax; glumes rough, pubescent, as long as the corolla; corolla awned on the back;

hairs as long as the valves ; culm and leaves smooth, slender.

Syn. *ARUNDO CINNOIDES.* Muhl.

CALAMAGROSTIS MEXICANA. Nutt.

Found in low grounds, two or three feet high with the habit of *Cinna arundinacea*.—August.—Perennial.

ARUNDO COARCTATA. Tor. *Glaucous reed.*

Panicle somewhat spiked, conglomerate ; calyx a little longer than the corolla, carinate ; corolla longer than the hairs, awned a little below the tip.

Syn. *ARUNDO GLAUCA.* Muhl.

Four or five feet high, very slender, with a somewhat glaucous hue.—In wet grounds.—August.—Perennial.

§ *Subgenus PSAMMA.* *Nectaries linear-lanceolate, longer than the seed ; stigmas three.*

ARUNDO ARENARIA. L. *Beach reed.*

Panicle spiked ; calyx acute ; hairs a third as long as the corolla ; leaves involute.

Syn. *PSAMMA ARENARIA.* Beauv.

Found on the sea beach among the drifting sand ; two or three feet high, glaucous, with long narrow leaves and a whitish panicle.—Nahant.—August.—Perennial.

§§ *Subgenus PHRAGMITES.* *Calyx from five to seven flowered.*

ARUNDO PHRAGMITES. L. *Common Reed.*

Calyx containing five florets, panicle loose. L.

A native of wet situations. Culm of the height of a man, very erect and smooth. Leaves lanceolate, long and broad, flat and sharp pointed. Panicle erect or nodding, conspicuous for the long, slender, shining hairs which project from the flowers, and give the whole a bright silvery appearance.—Found at the edges of deep waters, particularly on the north side of Fresh Pond, where it resembles at a distance a field of standing corn. Flowers in July and August.—Perennial.

44. PANICUM.

§ *Subgenus* SETARIA. *Flowers mostly spiked ; spikelets furnished with a bristly involucre.*

PANICUM GLAUCUM. L. *Glaucous Panic grass.*

Spike oblong ; involucre of many bristles, rough forward ; corolla of the fruit transversely wrinkled.

Syn. SETARIA GLAUCA. R. & S.

PENNISETUM GLAUCUM. Nutt.

Culm round, striated, grooved at top. Leaves linear-lanceolate, flat, with striated sheaths and hairy stipules. Spike cylindrical, its pedicels mostly two flowered with involucre of ten or a dozen yellowish bristles which are rough upward. Corolla inclosing the seed corrugated.—Cultivated and low grounds.—July.—Annual.

PANICUM VERTICILLATUM. L. *Whorled Panic grass.*

Spike whorled ; spikelets in fours ; involucre of two bristles, rough backward, single flowered.

Syn. SETARIA VERTICILLATA. R. & S.

PENNISETUM VERTICILLATUM. Nutt.

Culm spreading, rough near the spike. Leaves broad, rough forward ; stipules hairy. Spike single, rather cylindrical, composed of crowded spikelets arranged in whorls. The spike feels rough when drawn downward, being in this respect the reverse of the former species, the bristles of which are differently bearded.—Cultivated grounds.—July, August.—Annual.

§§ *Subgenus* ECHINOCHLOA. *Flowers in a compound clustered panicle ; lower valve of the barren floret awned or acuminate.*

PANICUM CRUS GALLI. L. *Cocksfoot Panic grass.*

Racemes compound, alternate and in pairs ; their stalk five angled ; glumes terminating in hispid bristles.

Syn. ECHINOCHLOA CRUS GALLI. R. & S.

A large annual grass, two or three feet high, with broad flat

leaves. Panicle made up of compound crowded racemes, the rachis five angled. Upper glumes terminating in awns of various length.—A common weed in cultivated ground.—August, September.—Annual.

§§§ Subgenus DIGITARIA. *Flowers in digitate or fascicled spikes, without bristles.*

PANICUM SANGUINALE. *Purple Panic grass.*

Spikes digitate, about four; leaves and sheaths somewhat hairy; flowers oblong, pubescent on the margin.

Syn. DIGITARIA SANGUINALIS. Mx.

A common weed. Culm ascending at base and rooting from the lower joints. Leaves a little waved and hairy. Spikes linear, radiating from the top of the culm, their rachis compressed, serpentine, with spikelets of two, three, or four flowers in its depressions.—Cultivated grounds.—July, August.—Annual.

§§§§ Subgenus PANICUM. *Flowers paniced, perfect florets cartilaginous, unarmed.*

PANICUM CAPILLARE. *L. Hairy Panic grass.*

Sheaths very hairy; panicle capillary, branching, decomposed, lax; flowers minute, all pedicelled, solitary, oblong-ovate, acuminate, awnless.

A large branching grass, the culm, leaves, and especially the sheaths, covered with thick, rigid, horizontal hairs. Panicle often a foot long and nearly as wide, its branches long, straight, stiff, slender, given off at right angles, knotted at base. Peduncles capillary, supporting solitary, scattered, naked flowers.—Frequent in cornfields, &c.—July, August.—Annual.

PANICUM LATIFOLIUM. *L. Broad-leaved Panic grass.*

Leaves ovate-lanceolate, clasping; sheaths hairy at the neck; panicle nearly simple.

Remarkable for its broad leaves. Culm a foot high, smooth, giving out branches from its joints. Leaves rough at the edge, acuminate, clasping, hairy where they unite with the sheaths.

Panicle small or of middling size, its branches mostly simple, the lower ones a little divided. Stigmas purple.—Woods.—May, June.—Perennial.

PANICUM NERVOSUM. *Muhl.* *Nerved Panic grass.*

Leaves lanceolate, clasping; sheaths and nodes smooth; panicle much branched, many flowered.

Much taller than the preceding, with narrower leaves and a larger panicle.—Meadows, Cambridge.—July.—Perennial

PANICUM VIRGATUM *L.* *Reedy Panic grass.*

Panicle spreading; glumes acuminate, smooth, dehiscent; leaves arundinaceous.

A tall, hard, reedy grass, growing about the edges of marshes, where its dry stems and leaves stand through the winter. Culm three or four feet high, smooth. Leaves linear, firm, rough at the edge. Panicle large, stiff, with remote flowers, the glumes gaping open, and very acute.—On Craigie's road.—August.—Perennial.

PANICUM DISCOLOR. *Muhl.* *Variiegated Panic grass.*

Panicle spreading; calyx roundish, larger valve striate; culm erect; sheaths hairy; lower leaves oval.

A slender, erect, pubescent species, with a small capillary panicle. Sheaths and sometimes the culm hairy. Leaves lanceolate, the uppermost close to the panicle, the lower ones close to the ground, very short, ovate, acute. Smallest glume often purple.—Wet meadows and sometimes dry grounds, varying in pubescence.—July.—Annual.

PANICUM NODIFLORUM. *Lam.* *Dense Panic grass.*

Panicles very small, lateral and terminal; glumes ovate, pubescent; leaves lanceolate; culm procumbent.

A procumbent species, invested with thin hairs. Leaves short lanceolate, crowded in tufts on the ends of the branches, and nearly concealing the small panicles.—Dry fields.—July, August.

It appears to be the *P. nodiflorum* of Pursh, excluding Michaux's synonym.

PANICUM DICHOTOMUM. *Pursh.* *Forked Panic grass.*

Panicle simple, few flowered; glumes obovate; leaves linear-lanceolate, divaricate, glabrous; culm dichotomous, procumbent.

Procumbent like the foregoing. Leaves of the culm lanceolate; those of the branches much smaller, linear, and divaricated. Panicle with few scattered flowers.—Dry fields and woods.—July.

45. **ANDROPOGON.**

ANDROPOGON NUTANS. *L.* *Chesnut Beard grass.*

Panicle compressed, nodding; calyx hairy; barren flower caducous; perfect floret with a long twisted awn.

Syn. ANDROPOGON AVENACEUS. Mx.

A tall grass with a long panicle of hairy, chesnut coloured flowers. Culm four or five feet high. Leaves rough on the edge. Panicle slightly nodding. Calyx villous; corolla red, with a long shining awn twisted and bent.—Borders of Dry Woods.—August, September.—Perennial.

ANDROPOGON FURCATUS. *Muhl.* *Forked Beard grass.*

Spikes digitate, about four; barren floret awnless; perfect floret awned; rachis hairy.

Four or five feet high, divided at top into a few diverging hairy spikes. Rachis, pedicels of the barren flowers, and calyx of the fertile ones, hairy. Awns twisted, slightly bent.—Dry fields.—August, September.—Perennial.

§ *Subgenus POLLINIA.* *Barren florets awned.*

ANDROPOGON PURPURASCENS. *Muhl.* *Broom grass.*

Branches straight, appressed, each with from two to four spikes on smooth pedicels of different lengths; rachis ciliate.

Very common in dry barren soils, its spikes having a hairy appearance. Culm three feet high, very slender. Branches deeply divided into several stalks, one usually very short and

axillary, another long and slender, each bearing a small leaf. Rachis and calyx very hairy, corolla nearly smooth, with a twisted awn.—August, September.—Perennial.

46. HOLCUS.

HOLCUS LANATUS. L. *Velvet grass.*

Panicle equal; calyx two flowered; lower floret perfect, awnless; upper floret barren, with a recurved awn included in the calyx; root fibrous.

An exceedingly soft grass covered throughout with a whitish downy pubescence, sometimes tinged with purple. Culm two or three feet high. Leaves linear-lanceolate. Calyx glumes mucronate. Upper floret barren, with a short awn which is straight at first, but at length recurved.—Meadows, Watertown.—June. Perennial.

§ *Subgenus* **HIEROCHLOA.** *Calyx three flowered; lateral ones triandrous, barren; central one diandrous, perfect.*

HOLCUS ODORATUS. L. *Seneca grass.*

Panicle glabrous; florets ciliate, about as long as the calyx.

Syn. **HOLCUS BOREALIS.** *Schrader.*

HOLCUS FRAGRANS. *Willd.?*

HIEROCHLOA BOREALIS. *R. & S.*

This is one of our earliest grasses, and distinguished by the delightfully fragrant odour it exhales while drying. Culm one or two feet high, smooth, invested with very short, remote, lanceolate leaves. Panicle erect, sometimes one sided, with large, distinct, chesnut coloured flowers. Calyx, two valved, acute, scarious, containing three florets about as long as itself. Two lateral florets barren, strongly ciliate on the inside. Middle floret perfect, ciliate at the end. There are no awns, unless the longest hairs be so called.—Meadows, Cambridge, Dorchester.—May.—Perennial.

This grass agrees with *H. odoratus* of Europe much better than with *H. fragrans* of Willdenow, if indeed the latter be any thing more than a variety.

§§ Subgenus **TORRESIA**. Calyx three flowered, two barren florets awned on the back.

HOLCUS ALPINUS. *Wahl.* Alpine Soft grass.

Panicle small ; calyx oblong ; florets hairy with a geniculate awn on the back.

Syn. **HIEROCHLOA ALPINA**. *R. & S.*

This grass I found in 1816, and, not having seen Wahlenberg's Flora Lapponica, named it *H. monticola*. Its habit resembles that of *H. odoratus*, but it is shorter, smaller, and more fragrant. Calyx smooth, purplish, acute, longer than the florets. Florets three, two outer ones obtuse, crested, slightly ciliate within, awned on the back. Central floret perfect.—On the White mountains of New-Hampshire.—July.

47. LOLIUM.

LOLIUM PERENNE. *L.* Ray grass. *Darnel*.

Spike awnless ; spikelets compressed, longer than the calyx. *Sm.*

Stem a foot or more in height, round, smooth. Leaves smooth, with short stipules clasping the stem. The stem terminates in a long, smooth, flexuous rachis or receptacle, to the two sides of which the spikelets are fixed, alternately, and at some distance from each other. Calyx sessile, of one valve, containing a flat ovate, acute, sharp edged spikelet of close lanceolate florets.—May, June.—Perennial.—Introduced, rare.

48. TRITICUM.

TRITICUM REPENS. *L.* Couch grass.

Calyx subulate, many nerved, five flowered ; florets sharp pointed ; leaves flat ; root creeping. *Sm.*

Syn. **AGROPYRON REPENS**. *Beauv.*

This grass has a long, creeping root, penetrating deeply into the earth, and very tenacious of life, which renders it a troublesome weed in cultivated grounds. Stem about two feet high. Leaves spreading, flat, rough on the edge and upper surface. Stem ending in a flexuous receptacle, bearing two rows of alter-

nate, sessile spikelets, more numerous and crowded, than in *Lolium perenne*. Glumes all lanceolate, subulate, and acuminate. —Flowers all summer.—Perennial.

49. ELYMUS.

ELYMUS VIRGINICUS. L.

Lyme grass.

Spike erect ; involucre striated, four or six leaved ; spikelets two or three together, each containing two or three flowers, mostly smooth.

The large erect spikes of this grass resemble at a distance heads of barley. The stem is round and smooth. Leaves smooth, somewhat rough on the margin. The stem ends in a compressed, flexuous, toothed receptacle ; each tooth supporting an involucre of four or six striated, rough, lanceolate glumes, ending in short awns. Each involucre contains two or three flowers. Calyx lanceolate with a straight terminal awn.—Marshes.—July.—Perennial.

ELYMUS STRIATUS. Willd.

Striated Lyme grass.

Spike erect ; involucre four leaved, nerved ; spikelets two together, each one or two flowered, hispid.

Much smaller and more slender than the preceding, in its aspect resembling small spikes of rye. Leaves and sheaths variable from smooth to pubescent. Involucre four leaved, deeply nerved, two flowered, one floret commonly abortive. Awns three or four times as long as the corolla.—Woods.—July.—Perennial.

§ *Subgenus GYMNOTICUM. Involucre uncertain, spikelets divaricate.*

ELYMUS HYSTRIX. L.

Hedgehog grass.

Spikes erect ; involucre of four bristles or callosities ; spikelets in pairs, divergent, at length divaricate.

Syn. ASPRELLA HYSTRIX, Cavan.

GYMNOTICUM HYSTRIX. Schreb.

This singular grass is known at sight by its pairs of diverging spikelets placed almost at right angles with the rachis. It differs from the genus *Elymus*, in the apparent absence of the in-

volucre. The lower pairs of spikelets, however, have commonly a short setaceous involucre of four bristles springing from the same number of callosities at base. Upwards, the bristles diminish in size and number, leaving only the callosities in their place. Spikelets in pairs, widely divergent, three flowered. Awn three or four times as long as the corolla.—Woods.—July.—

By an oversight, the late Dr. Muhlenberg has called the spikelets six to nine flowered.

We have two varieties.

α. Three or four feet high, sheaths smooth, spikelets about twenty, pubescent.

β. One or two feet high, sheaths rough, spikelets about ten, glabrous.

50. HORDEUM.

HORDEUM JUBATUM. *Ait.*

Squirrel tail grass.

Lateral florets abortive, their awns many times shortest; involucre setaceous, six times as long as the flower.

This grass is remarkable for the length and fineness of its awns, which give to its spikes a hairy appearance. Stems slender, smooth, and round, two feet high. Leaves rather short, rough on the back and edge. Sheaths smooth. Receptacle compressed, ciliate on the edges, jointed, breaking at the joints as the plant dries. Flowers two ranked, one at each joint or tooth of the receptacle. Each perfect floret is surrounded at its base by an involucre of six long capillary awns, two of which are distinct; the other four unite in pairs a short way from their insertion, each pair with a minute, abortive floret in its fork. Outer glume of the calyx lanceolate, ending in an awn six times its length, and equalling those of the involucre.—Marshes.—June.

TRIGYNIA.

51. LECHEA.

LECHEA MAJOR. *L.*

Large Pin weed.

Hairy; leaves oblong-lanceolate, flowers in fasciated racemes, unilateral, on short stalks.

An upright hairy plant, found upon rocks, dry hills, and sandy fields exposed to the sun. Stem from one to two feet high, stiff, brittle, purple, covered with hair. Leaves nearly oval, reflexed at the margin, downy, whitish underneath. Flowers small, obscure, crowded upon the ends and sides of the branches, followed by roundish capsules of the size of a large pin head.—July, August.

LECHEA MINOR. *L.*

Small Pin weed.

Smoothish, leaves linear-lanceolate, acute; panicle leafy, its branches elongated, flowering on all sides.

Grows with the last in dry sterile situations, and is about half its size, its branches finer and more spreading. Leaves narrow, revolute at the margin. Branches numerous, mostly simple. Flowers minute, in small lateral and terminal racemes. Capsules round, not larger than mustard seed.—July, August.

LECHEA RACEMULOSA. *Mx.*

Clustered Pin weed.

Covered with close hair; leaves linear, acute, ciliate; panicle slender, pyramidal; flowers alternate, pedicelled.

About the size of the last, but more hairy, and its clusters more naked.—Dry fields.—July, August.

52. MOLLUGO.

MOLLUGO VERTICILLATA. *L.*

Carpet weed.

Leaves whorled, wedge-form, acute; stem subdivided, decumbent; peduncles one flowered. *L.*

A small, flat, spreading plant common in cultivated ground. Stems prostrate, jointed, simple, or compound, giving off at each joint a whorl of wedge-shaped or spatulate leaves, and a few small flowers on simple footstalks.—Flowers at midsummer and after.—Annual.

53. PROSERPINACA.

PROSERPINACA PALUSTRIS. *L.* *Spear leaved Proserpinaca.*

Lower leaves subpinnatifid or cut-serrate; the rest linear-lanceolate, sharply serrate. *Mich.*

An aquatic, remarkable for its very hard, triangular, axillary fruit. The leaves stand alternately on the stem, are narrow, pointed, with very acute serratures. When the plant grows in the water, its immersed leaves are cut into linear segments. Flowers two or three in the axil of each leaf. Nut bony, three sided, three celled.—Found in meadows and ponds.—June, July.

Class IV. TETRANDRIA. *Four stamens.*

Order I. MONOGYNIA. *One style.*

54. CEPHALANTHUS. Proper calyx superior, funnel form; common receptacle globular; seed one, downy.

55. PLANTAGO. Calyx four cleft; corolla four cleft, inferior, with a reflected border; stamens very long; capsule two celled, opening transversely.

56. CENTAURELLA. Calyx four parted; corolla four parted, somewhat bell shaped; capsule invested with the permanent corolla and calyx, one celled, two valved.

57. MITCHELLA. Corolla monopetalous, superior, two on each germ; stigmas four; berry bifid, four seeded.

58. HOUSTONIA. Corolla monopetalous; calyx four toothed; capsule two celled, two valved.

59. AMMANIA. Calyx inferior, tubular, eight toothed; capsule four celled.

60. GALIUM. Corolla flat, superior; seeds two.

61. CORNUS. Calyx four toothed; corolla four petalled, superior; drupe with a two celled nut.

62. *ICTODES*. Spathe one leaved; spadix oval, covered with flowers; calyx wedge shaped; seeds numerous, globular, imbedded in the spadix.

63. *LUDWIGIA*. Calyx four parted, superior; petals four; capsule quadrangular, four celled.

64. *ISNARDIA*. Calyx campanulate, four cleft, permanent; corolla none; capsule four celled.

Order II. DIGYNIA. Two styles.

65. *HAMAMELIS*. Involucre three leaved; proper calyx four leaved; petals four; nut two celled, with two horns.

66. *SANGUISORBA*. Calyx two leaved, inferior; corolla flat, four cleft, superior; capsule four cornered.

Order IV. TETRAGYNIA.

67. *ILEX*. Calyx four toothed; corolla monopetalous; styles none; berry four seeded.

68. *POTAMOGETON*. Calyx none; corolla four petalled; seeds four, sessile.

69. *RUPPIA*. Calyx none; corolla none; seeds four, pedicelled.

TETRANDRIA.

MONOGYNIA.

54. CEPHALANTHUS.

CEPHALANTHUS OCCIDENTALIS. L. *Button bush.*

+ Leaves opposite or in threes. L.

Button bush or river bush is a frequent ornament of the water side, its insulated thickets furnishing a safe retreat for the nests of the black bird (*Oriolus phœniceus*.) The shrub rises five or six feet out of the water, its leaves are tough, spreading, pointed, and entire. In the month of July it puts forth its spherical heads of flowers, which at a distance appear not unlike the balls of the plane tree. Receptacle globular, of the size of a large pea, covered with whitish funnel shaped flowers. The long projecting styles give to the whole a bristly aspect. The appearance of this shrub on elevated ground, often indicates the presence of springs of water.

55. PLANTAGO.

PLANTAGO MAJOR. L. *Large Plantain.*

+ Leaves ovate, smoothish, somewhat toothed with rather long footstalks; scape round; flowers imbricated; seeds numerous. Sm.

This vegetable, which grows at every one's door, and not the less for being trampled under foot, is in considerable repute among many people as a refrigerant external application. Leaves spreading on the ground, on channelled footstalks containing strong fibres, like others of the genus, which draw out when the stalks are broken. Spikes very long and close. As in others of the kind, the flowering commences at bottom and proceeds very gradually toward the top.—Flowers most of the summer.—Perennial.

PLANTAGO LANCEOLATA. L. *Ribwort or field Plantain.*

+ Leaves lanceolate, tapering at each end; spike ovate, naked; scape angular. Sm.

Distinguished from the last by its narrow leaves, short spikes, and furrowed stalk. The leaves are lanceolate, acute, entire, and strongly ribbed. Stalk upright, deeply channelled. Spike dark coloured, ovate, with a circle of projecting, whitish stamens.—Pastures and road sides.—From May to October.—Perennial.

PLANTAGO MARITIMA. *L.*

Sea Plantain.

Leaves linear, mostly entire, channelled, woolly at the base ; spike cylindrical, scape round. *Sm.*

Found on salt marshes and known by its leaves, which are fleshy, linear-subulate, and hollowed out on their inner side. Spike cylindrical, of short or moderate length.—Flowers in July and August.—Perennial.

56. **CENTAURELLA.**

CENTAURELLA PANICULATA. *Mich.*

Late Centaurella.

Stem branching above ; branches subdivided ; panicle erect, many flowered ; segments of the corolla oval ; style much shorter than the germ. *Mich.*

Syn. **BARTONIA PANICULATA.** *Muhl.*

A slender, upright plant, found in meadows, flowering about August. Stem square, often twisted. Leaves opposite, minute, subulate, resembling scales. Flowers small, white, on the ends of the branches, which are erect and simple or compound.

57. **MITCHELLA.**

MITCHELLA REPENS. *L.*

Chequer berry.

A handsome little creeping plant, the only species of its genus. It is found in woods about the roots of trees, creeping in the decayed leaves. Stems furnished with opposite, round, or heart shaped, smooth, petioled leaves, about the size of the finger nail. Corollas purplish white, funnel form, four cleft, hairy within, bearing the stamens in their sinuses. The two calyxes and corollas stand on a common germ, so that two apparent flowers produce only one berry. The blossoms are exceedingly fragrant, and the leaves sometimes variegated.—June, July.—Perennial.

58. HOUSTONIA.

HOUSTONIA CÆRULEA. *L.* *Bluish Houstonia.*

Root leaves ovate ; stem compound ; first peduncles two flowered. *L.*

Common among the grass in moist ground, flowering in May and afterward. The stems are slender, repeatedly forked, the divisions supporting single flowers. The root leaves are spatulate or oval, tapering into footstalks ; those of the stem opposite, situated at the forks and elsewhere, lance-oval, the upper ones sessile. Flowers smaller than violets, with which they grow. Segments of the calyx erect, pointed. Corolla bluish white, yellow at the centre, consisting of a slender tube with four ovate, acute, spreading segments. Anthers inserted at the mouth of the tube.—Style exserted, stigma bifid.—Perennial.

HOUSTONIA LONGIFOLIA. *Willd.* *Long leaved Houstonia.*

Leaves lanceolate, narrowed at each end ; flowers corymbed. *Willd.*

Found in dry soils at Blue hills and elsewhere, not commonly exceeding four or five inches in height. Stem erect, six sided, branching toward the top. Leaves smooth, opposite, lanceolate, somewhat obtuse. Flowers purplish, in a terminal corymb.—Calyx segments, oblong, acute ; corolla funnel shaped, divided into four acute spreading segments, pale striped with purple inside ; stamens inserted in the tube ; style as long as the corolla, stigma two cleft.—Blue hills, Milton.—June, July.—Perennial.

59. AMMANNIA.

AMMANNIA HUMILIS. *Low Ammannia.*

Stem procumbent, leaves lanceolate narrowed to a petiole, flowers solitary opposite sessile.

Stem ascending, leaves oblong lanceolate, rather obtuse, acute at base, and nearly sessile. Flowers small, red, closely sessile in the axils. In wet meadows and on the muddy banks of rivers.—August, September.—Perennial.

60. GALIUM.

GALIUM ASPRELLUM. *Mich.* *Pointed Cleavers or Clivers.*

Stem decumbent, rough backward; leaves in sixes, oval-lanceolate with a flaccid point; flowers on very short pedicels; fruit smooth. *Mich. abr.*

Found in thickets and low grounds. Stem weak, supported by plants around it, like many others of the genus; rough with minute reflexed prickles, as are also the ribs and margins of the leaves. Leaves in whorls of six, lanceolate, with a slender, scarious, curved point. Flowers white. Fruit smooth, very minute.—June, July.—Perennial.

GALIUM SEPTENTRIONALE. *R. & S.* *Northern Galium.*

Stem erect, smooth; leaves in fours linear-lanceolate, acute, with the margin and midrib rough; panicle terminal; fruit hispid.

Syn. GALIUM BOREALE. Pursh.

The stem of this species is erect, square, and perfectly smooth. Leaves narrow lanceolate, acute, the margin rough and often revolute. Flowers numerous, white, in a terminal panicle with trichotomous branches. Fruit covered with minute bristles.—Woods.—July, August.—Perennial.

It approaches very near to *G. boreale* of Europe, and may perhaps be a variety. But on comparing it with specimens from England and Germany, I find it constantly differs in the smoothness of its stem, and its narrower, longer, and more acute leaves.

GALIUM TINCTORIUM. *L.* *Dyers Cleavers.*

Leaves linear, those of the stem in sixes, of the branches in fours; stem flaccid; peduncles two flowered; fruit smooth. *L.*

A weak, branching plant, rough with reflexed prickles. Leaves linear-lanceolate, obtuse, whorled, the larger ones in sixes, smaller ones in fours. Peduncles very small, supporting minute white flowers, which are succeeded by smooth fruit.—Thickets and low ground.—June, July.—Perennial.

According to Kalm the roots dye a permanent red.

* *GALIUM OBTUSUM.**Obtuse Galium.*

G. caule lævi, procumbente ; foliis quaternis, oblanceolatis, obtusis, margine nervoque asprellis ; fructu lævi.

Stem smooth, procumbent ; leaves in fours, oblanceolate, obtuse, rough on the edge and midrib ; fruit smooth.

Stem slender, diffuse, much branched, quadrangular, entirely smooth. Leaves universally in fours, linear-lanceolate, very obtuse, a little rough at the midrib and margin. Peduncles slender, three flowered. Petals acute, white. Fruit globular, smooth.—On the banks of Muddy brook, Roxbury.—July.—Perennial.

I should not have added another species to this numerous genus, but I find no character applying to this in the extensive list of Røemer, and Schultes. It is a larger and more open plant than *G. tinctorium*.

*GALIUM VERUM. L.**Yellow Bedstraw.*

Leaves eight in a whorl, channelled, entire, rough ; flowers in dense panicles ; fruit smooth. *Sm.*

Grows at Roxbury in dry, open pastures. Stem upright, slender, pubescent. Leaves linear, rough, with the edges rolled back, pointing downward. Branches opposite, unequal, leafy, many flowered. Flowers small, yellow, followed by minute smooth fruit.—June, July.—Perennial.

Probably introduced from Europe.

*GALIUM CIRCÆZANS. Mx.**Cross Cleavers.*

Stems erect ; leaves in fours, oval, ciliate ; peduncles divaricate, few flowered ; fruit bristly.

Syn. GALIUM BRACHIATUM. Muhl. nec Pursh.

Found in woods. Stem upright, smooth, minutely pubescent, Leaves an inch, or an inch and an half long, and more than half as broad, three nerved, hairy at the margin and nerves. Branches few, near the top, opposite, few flowered. Peduncles nearly simple, bent in various directions, making angles at every flow-

er, and giving off at the same time a minute leaf. Fruit a little burr with its short footstalk reflected, as in *Circaea*, with uncinatè bristles.—June, July.—Perennial.

* *GALIUM TORREYI.*

Acuminate Galium.

G. caule erecto ; foliis quaternis lanceolatis, acuminatis ; pedunculis paucifloris ; fructu hispido.

Stem erect ; leaves in fours, lanceolate acuminate ; peduncles few flowered ; fruit hispid.

Syn. GALIUM CIRCAEZANS var. lanceolatum. Torrey. N. Y. Cat.

This species is a congener of the preceding, and closely resembles it in its mode of flowering and fruit. Its leaves, however, are narrower, twice as long, and attenuated to a long point, giving it a very different aspect. It is generally less ciliate. From *G. septentrionale* it differs in its leaves being lanceolate, not linear, and three or four times as large. The fruit also is scattered, and nearly sessile on virgated stalks, not forming a thick panicle as in that species.—Woods.—June, July.—Perennial.

This plant and the preceding are sometimes called *Liquorice* by the country people.

GALIUM TRIFIDUM. Willd.

Small Cleavers.

Stems procumbent, rough backward ; leaves of the stem in fives, of the branches in fours, linear, obtuse, rough on the edge ; flowers mostly trifid ; fruit smooth.

Syn. GALIUM CLAYTONI. Mx.

This is our smallest species, and its corollas have frequently but three segments. It agrees sufficiently well with the European plant figured by Oeder, though some have separated it.—Wet grounds.—July.

GALIUM TRIFLORUM. Mx.

Three flowered Cleavers.

Stems procumbent, smoothish ; leaves in sixes, obovate-lanceolate, smooth, scarcely ciliate ; branches elongated, three flowered ; flowers pedicelled, fruit hispid.

A well marked species with rather large leaves and small flowers. The fruit forms a sort of umbel of three rays.—Woods, Chelsea beach island.—July.—Perennial.

GALIUM APARINE. *L.* *Common Cleavers.*

Leaves in eights, lanceolate, carinate, rough, prickly backwards; stem flaccid; fruit bristly. *Sm.*

Stem brittle, weak, much branched, prickly backward, leaning upon other plants for support. Leaves in whorls of about eight together, lance-obovate, their margin and keel rough backward. Flowers numerous, small, white, on axillary and terminal peduncles. Fruit hispid.—In moist thickets.—May, June.—Annual.

61. CORNUS.

§ *Subgenus* ————— *Flowers umbelled, with a four leaved involucre.*

CORNUS CANADENSIS. *L.* *Dwarf Cornel.*

Herbaceous; upper leaves in whorls, slightly petioled, veined. *Willd.*

A handsome plant of half a foot in height. Root creeping, stem simple, ascending, surmounted at top with a single whorl of six oval leaves, two of which are lower and larger. The umbel of flowers is surrounded by a large white involucre of four leaves, which at first sight is taken for the petals of a simple flower. The berries or drupes are globular and red. Among the fertile stems are found a multitude of barren ones, supporting whorls of four leaves.—Woods, Brookline, Cambridge.—May, June.—Perennial.

CORNUS FLORIDA. *Dogwood tree.*

Bigelow, Medical Botany, Pl. xxviii.

Arboreous, flowers in heads, surrounded by an involucre of obovate leaves with recurved points.

A conspicuous and very ornamental tree, covered early in June with a profusion of large white flowers. It is below the middle size, is of slow growth, and possesses a very compact wood, covered with a rough broken bark. The branches are smooth, covered with a reddish bark, marked with rings at the

place of the former leaves. The leaves, which are small at the flowering time, are opposite, petioled, oval acute, entire, nearly smooth, paler beneath, and marked as in others of the genus with strong, parallel veins. The flowers, which are very small, grow in heads or sessile umbels, upon peduncles an inch or more in length. At the base of each bunch is the large spreading involucre, constituting the chief beauty of the tree when in flower. This involucre is composed of four white, nerved, obovate leaves, having their point turned abruptly down or up, so as to give them an obcordate appearance. The point has frequently a reddish tinge. Calyx superior, somewhat bell shaped, ending in four obtuse spreading teeth. Petals four, oblong, obtuse, reflexed. Stamens, four erect, the anthers oblong, with the filaments inserted in their middle. Style erect, shorter than the stamens, with an obtuse stigma. The fruit is an oval drupe of a glossy scarlet colour, containing a nucleus with two cells and two seeds. The bark of this tree is a bitter tonic used in medicine.—Woods, Quincy, Dedham.—June.

§§ *Subgenus* ———— *Flowers cymed, without an involucre.*

CORNUS ALTERNIFOLIA. *VHer.* *Alternate leaved Cornel.*

Branches warty; leaves alternate, ovate, acute, whitish underneath; cymes spreading.

A small tree somewhat resembling the next species, but larger, its leaves somewhat smaller, and arranged about the stem without order. Fruit purple, smaller than in *C. alba*.—Swamps—rare.—June.

CORNUS ALBA. *L.* *White berried Cornel.*

Branches recurved; leaves opposite, broad, ovate, hoary underneath; cymes naked, flat. *VHer.*

A shrub or small tree with spreading branches, and ovate, acuminate leaves, whitish underneath. Cymes without involucre, as are the rest of this subgenus. Flowers white, succeeded by white fruit. In rich ground it sometimes blossoms twice a year.—Roxbury, Cambridge.

CORNUS CIRGINATA. *VHerit.* *Round leaved Cornel.*

Branches warty ; leaves opposite, orbicular, white-downy underneath ; cymes naked, flattened. *VHer.*

Syn. CORNUS TOMENTULOSA. *Mich.*

An erect slender shrub, distinguished by its spotted or warty branches, but particularly by its large, rounded, acuminate leaves, which are white and downy, almost woolly underneath. Cymes terminal, flattened. Fruit bluish.—On Brighton road.—June.

CORNUS PANICULATA. *VHerit.* *Panicled Cornel.*

Branches erect, leaves opposite, ovate, hoary underneath ; cymes panicled. *VHer.*

A more common shrub than the two last, sufficiently distinguishable by its smaller leaves. The cymes are numerous upon the branches, more or less oblong, and decidedly panicled when in fruit. Calyx very minute, so as to be hardly perceptible to the naked eye. The berries or drupes are white, as in *Cornus alba*.—Low grounds.—June, July.

62. ICTODES.

ICTODES FÆTIDUS. *Skunk Cabbage.*

Bigelow, Medical Botany, Pl. xxiv.

Syn. DRACONTIUM FOETIDUM. *L.*

POTHOS FOETIDA. *Mc.*

A strong scented, repulsive plant, exceedingly meritorious of the name it bears. The root is large and abrupt, with numerous crowded, fleshy fibres. The spathe which emerges from the ground some time before the leaves, is ovate, swelling, various in width, cucullate, spotted, and sometimes nearly covered with dull brownish purple ; the top acuminate and incurved, the edges infolded, auriculate at base, and at length coalescing. Within this is the oval spadix, on a short peduncle, covered with perfect tetrandrous flowers, and of the same colour with the spathe. Calyx leaves four, fleshy, wedge shaped, truncate, the top and edges inflected, the whole crowded so as to form a compact covering for the spadix. Stamens four, opposite the calyx leaves, with subulate filaments equal in length to the calyx, and

oblong four celled anthers. Style four sided, tapering; stigma minute, pubescent; germ roundish, concealed within the spadix. After the spathe decays, the spadix continues to grow, and with it every part of the flower except the anthers. When the fruit is ripe, the spadix has attained many times its original dimensions, while the calyx, filaments, and style are larger, very prominent, and separated from each other. Within the spadix, at the base of each style, is a round, fleshy seed, as large as a pea, white, tinged with green and purple, invested with a separate membranous coat, and with a prominent corculum situated in a depression at top.

The leaves, which spring up some time after the flowers, are numerous, large, and crowded, oblong heart shaped, acute, smooth, with numerous fleshy veins of a paler colour. They grow from the root on long petioles, hollowed in front, and furnished with large oblong sheaths. They continue to increase in size for a month or two after the flowering period is past, and are conspicuous in summer in every meadow, swamp, and brook side.

The odour depends on a volatile principle not separable by distillation. There is besides an acrid principle which remains in the root when dried. This plant has been found useful in asthma and some other diseases, but is not safe in large quantities.

63. LUDWIGIA.

LUDWIGIA ALTERNIFOLIA. *L.* *Common Ludwigia.*

Erect, smooth; leaves alternate, lanceolate, pale beneath; peduncles axillary, one flowered; capsules globose, four cornered, crowned with the calyx.

Syn. LUDWIGIA MACROCARPA. *Mx.*

Stem erect, round, with a tough, fibrous bark. Leaves scattered, on very short petioles, lanceolate, entire, pale, and veined underneath. Flowers on short, axillary stalks. Calyx of four ovate acute leaves, investing the germ at base, which is square with winged angles. Petals orbicular, yellow.—Shady swamps, Cambridge.—July, August.—Perennial.

64. ISNARDIA.

ISNARDIA PALUSTRIS. L.

Isnardia.

A weed swimming in ditches and streams of water, or creeping on wet grounds. Leaves opposite, oval or ovate, smooth. Flowers small, sessile in the axils of the leaves, without beauty.—June.—Annual.

DIGYNIA.

65. HAMAMELIS.

HAMAMELIS VIRGINICA. L.

Witch hazel.

The variegated appearance of the American forest during the months of autumn, has been repeatedly noticed by travellers. Among the crimson and yellow hues of the falling leaves there is no more remarkable object than the Witch hazel, in the moment of parting with its foliage, putting forth a profusion of gaudy, yellow blossoms, and giving to November the counterfeited appearance of spring. It is a bushy tree, sending up a number of oblique trunks, about the size of a man's arm or larger. The leaves are oval or obovate, loosely waved or toothed upon the margin. Flowers sessile, about three together, proceeding from a gemmaceous involucre. Calyx double, pubescent, the first of three roundish, short, bracteform, leaflets; the second larger, of four ovate, acute, recurved segments. Petals four, very long, linear, transversely corrugated, in the bud rolled inward. Nectaries four scales, wedge shaped, truncate, adnate to the claws of the petals. Filaments erect, clavate, with adnate anthers opening on each side by oval, concave, vertical valves like doors. Germs two, ovate, hairy, with divergent styles. Capsule roundish, its lower half invested by the persistent calyx with four recurved points; its upper half naked, with a partial fissure and two short recurved points. Nuts two, double shelled, the outer shells growing together, bursting elastically at top; inner shells free, oblong, glossy, and blackish; seed or kernel oblong, the corculum very distinct and nearly as long as the seed.—Not uncommon in damp woods.—October, November.

The wood is white, its fibres fine and flexible. The twigs were formerly used in the imposture of the diving, or mineral rods, supposed to indicate the existence of precious ores.

66. SANGUISORBA.

SANGUISORBA CANADENSIS. L.

Canada Burnet.

Spikes very long, cylindrical ; stamens many times longer than the corolla.

Stem erect, two feet high, round, smooth, striate, two or more feet high. Leaves pinnate, the leaflets oblong, unequal at base, serrate, very obtuse. Spikes terminal, very long, with white flowers. Calyx two leaved, minute. Corolla of four obtuse segments. Stamens several times longer than the corolla. Germ oval between the calyx and corolla.—On the Newburyport turnpike, twelve miles from Boston, in wet meadows.—July.—Perennial.

TETRANDRIA.

67. ILEX.

ILEX OPACA. *Ait.**American Holly.*

Leaves oval, evergreen, with strong spreading spinous teeth ; fascicles of flowers lax, peduncles compound ; calyxes rather acute, smooth ; fruit ovate. *Mich.*

This tree is more interesting, from being one of the few evergreen trees, which we possess, that are not of the coniferous tribe. Its leaves are tough, smooth, and shining, furnished at the edge with short, rigid, acute spines. The flowers are numerous, small, of a greenish white, growing in bunches around the branches. Berries red, falling very late.—Quincy, Cohasset.—June.

ILEX CANADENSIS.

Canadian Holly.

Leaves deciduous, oval, entire or slightly toothed at the tip ; peduncles subsolitary, one flowered ; fruit slightly four cornered.

A slender shrub six or seven feet high. Leaves smooth, oval, entire, or slightly toothed, often mucronated. Flowers small, green, on long slender peduncles. Corolla of four spreading, acute segments. Stamens four, as long as the corolla. Germ round, pointed in the barren flowers ; longer and bearing a four

lobed stigma in the perfect ones; the shrub being strictly polygamous. Berries deep red.—Swamps, Cambridge.—May.

68. POTAMOGETON.

POTAMOGETON NATANS. *L.* *Floating Pond weed.*

Upper leaves oblong-ovate, rounded at the base, petioled, floating. *Sm.*

A very common species of pond weed, growing near the muddy banks of deep waters. Leaves oblong, sometimes a little hearted at base, two inches long, floating on the surface, on footstalks accommodated to the depth of the water. In June the spikes of dull flowers emerge on solitary round footstalks, surrounded at base by lanceolate bractes or stipulæ.

POTAMOGETON FLUITANS. *L.* *Long leaved Pond weed.*

—Leaves petioled, lower ones linear, very long, upper ones lanceolate, nerved, coriaceous.

Leaves narrower than the preceding, the immersed ones very long and linear.—Ponds.—June.

POTAMOGETON PERFOLIATUM. *L.* *Perfoliate Pond weed.*

Leaves cordate-ovate, clasping, all immersed; spikes terminal; flowers alternate.

This has no floating leaves, the flowers only appearing above water.—July.

POTAMOGETON LUCENS. *Mx.* *Shining Pond weed.*

Leaves lanceolate, subsessile with a thick midrib; spikes long, cylindrical.

A very long, large leaved species. Leaves immersed.—Ditches, &c.—July.

POTAMOGETON SETACEUM. *Willd.* *Setaceous Pond weed.*

Upper leaves opposite, lanceolate, five nerved, on short petioles; lower ones alternate, filiform; spikes dense, shorter than the leaves.

Very different in size from any of the preceding, the whole plant being small and slender.—July.

POTAMOGETON PAUCIFLORUM. *Short headed Pond weed.*

Leaves sessile, linear, flat ; heads about flour flowered.

This species is not spiked, the flowers forming a little terminal head or whorl, a few together.—July.

69. RUPPIA.

RUPPIA MARITIMA. L. *Sea Ruppia.*

An immersed, grass like plant, of salt water ditches and ponds. Leaves linear, all under the surface. Spike or head above water, about four flowered. Seeds four or five on pedicels.—South Boston, &c.—July.



Class V. PENTANDRIA. *Five stamens.*

Order I. MONOGYNIA. *One style.*

A. *Flowers monopetalous, inferior, with four naked seeds.*

70. ECHIUM. Corolla irregular, bell shaped, with the throat naked ; stigma two cleft.

71. LITHOSPERMUM. Corolla infundibuliform with the throat naked ; calyx five parted.

72. LYCOPSIS. Corolla infundibuliform with a curved tube ; its throat closed with convex scales.

73. CYNOGLOSSUM. Corolla funnel form, the throat closed with arched valves ; seeds depressed, fixed laterally to the style.

74. MYOSOTIS. Corolla salver shaped, five cleft, lobes slightly notched ; throat closed with concave valves.

B. *Flowers monopetalous, inferior ; seeds in a vessel.*

75. HYDROPHYLLUM. Corolla campanulate with

five internal, longitudinal, nectariferous stripes ; capsule one celled, two valved.

76. *ANAGALLIS*. Corolla wheel shaped ; stamens hairy ; capsule opening transversely.

77. *LYSIMACHIA*. Corolla wheel shaped ; stigma obtuse ; capsule one celled, mostly ten valved.

78. *SABBATIA*. Tube of the corolla urceolate, border from five to twelve parted ; stigma two parted, the divisions spiral ; anthers at length revolute.

79. *HOTTONIA*. Corolla hypocrateriform, stamens inserted on the tube ; stigma globose ; capsule one celled.

80. *MENYANTHES*. Corolla hairy inside ; stigma cloven, capsule one celled, two valved.

81. *VILLARSIA*. Corolla rotate, the segments bearded at base and inflexed at the margin ; five glands alternate with the stamens ; capsule one celled without valves.

82. *CONVOLVULUS*. Corolla campanulate, plaited ; stigmas two ; capsule two or three celled ; the cells two seeded.

83. *DATURA*. Corolla funnel form, plaited ; calyx tubular, deciduous ; capsule two celled, four valved.

84. *HYOSCYAMUS*. Corolla funnel form, irregular ; stamens inclined ; stigma capitate ; capsule two celled, covered with a lid.

85. *VERBASCUM*. Corolla wheel shaped ; stamens declined, bearded ; stigma simple ; capsule two celled.

86. *AZALEA*. Corolla bell, or funnel form ; stamens inserted in the receptacle ; stigma obtuse ; capsule five celled.

87. *DIAPENSIA*. Corolla hypocrateriform with a short tube ; calyx five parted, bracted at base ; stigma three lobed ; capsule three celled, three valved, many seeded.

88. *SOLANUM*. Corolla wheel shaped ; anthers slightly cohering, opening by two pores at the top ; berry two celled.

C. *Flowers monopetalous, superior.*

89. *SAMOLUS*. Corolla hypocrateriform ; stigma capitate ; capsule one celled, five valved at top.

90. *CAMPANULA*. Corolla bell shaped, closed at the bottom by valves bearing the stamens ; stigma three cleft ; capsule three or five celled, opening by lateral pores.

91. *LOBELIA*. Corolla irregular, cloven ; anthers united ; stigma capitate ; capsule two or three celled.

92. *LONICERA*. Calyx five toothed ; corolla long, tubular, its border five cleft ; berry distinct, three celled, many seeded.

93. *XYLOSTEUM*. Calyx five toothed ; corolla funnel shaped ; berries two, connate at base, two celled, many seeded.

94. *DIERVILLA*. Calyx oblong, five cleft ; corolla twice as long, funnel shaped, five cleft ; capsule oblong, four celled, many seeded.

95. *TRIOSTEUM*. Corolla monopetalous, five lobed, unequal ; calyx as long as the corolla ; berry three celled ; cells one seeded.

D. *Flowers five petalled, superior.*

96. *RIBES*. Calyx bearing the corolla ; style bifid ; berry many seeded.

E. *Flowers five petalled, inferior.*

97. **CEANOTHUS.** Calyx tubular ; petals five, vaulted ; berry dry, three seeded.

98. **CELASTRUS.** Calyx flat ; corolla five petalled, spreading ; capsule three angled, three celled ; seeds covered with a hood.

99. **VITIS.** Petals five, shrivelled, mostly cohering at top ; style none ; berry five seeded.

100. **IMPATIENS.** Calyx two leaved ; corolla irregular, with a hooded, spurred nectary ; anthers united ; capsule superior, five valved, elastic.

101. **VIOLA.** Calyx five leaved ; corolla irregular, spurred ; anthers cohering ; capsule one celled, three valved.

102. **CLAYTONIA.** Calyx two valved ; corolla five petalled ; stigma three cleft ; capsule three valved, one celled, three seeded.

F. *Flowers incomplete.*

103. **THESIUM.** Calyx five cleft, bearing the stamens ; corolla none ; seed one, covered.

104. **QUERIA.** Calyx inferior, connivent, five parted ; segments oblong, hollowed at tip ; corolla none ; capsule membranous, not opening.

Order II. **DIGYNIA.** *Two styles.*A. *Corolla monopetalous.*

105. **APOCYNUM.** Corolla bell shaped ; five nectareous filaments alternating with the stamens ; follicles two.

106. **ASCLEPIAS.** Corolla reflected ; nectaries five, ovate, concave, with a little horn projecting from each ; follicles two.

107. **GENTIANA.** Corolla tubular at the base,

without nectariferous pores ; capsule two valved, one celled, many seeded ; number of parts variable.

108. CUSCUTA. Calyx four or five cleft ; corolla four or five cleft ; capsule two celled, opening transversely at the base.

B. *Flowers five petalled, inferior.*

109. HEUCHERA. Petals five, inserted on the calyx ; capsule two celled, two beaked.

C. *Flowers incomplete.*

110. SALSOLA. Calyx five parted ; corolla none ; capsule one seeded ; seed spiral.

111. CHENOPODIUM. Calyx five parted, five cornered ; corolla none ; seed one, lenticular, invested with the calyx.

112. ULMUS. Calyx five cleft ; corolla none ; seed one, inclosed in a flat membranous capsule.

D. *Umbelliferous. Flowers five petalled, superior, two seeded.*

113. HYDROCOTYLE. Umbel simple ; involucre four leaved ; petals entire ; fruit orbicular, compressed.

114. SANICULA. Umbels in heads ; flowers of the centre abortive ; seeds muricate.

115. DAUCUS. Involucres pinnatifid ; outer florets abortive ; fruit hispid, cohering.

116. HERACLEUM. General involucre deciduous ; flowers radiant ; petals notched, with the point inflected ; fruit elliptic, notched, compressed, striate, with a dilated margin.

117. CONIUM. Involucres general and partial, the partial half wanting ; petals heart shaped, equal ; fruit ovate, gibbous, five ribbed on each side.

118. *ANGELICA*. Involucres general and partial ; petals incurved ; styles reflected ; fruit roundish, solid, with three wings on each side.

119. *LIGUSTRIUM*. Involucres general and partial, fruit oblong, five furrowed on each side, corollas equal, petals involute, entire.

120. *SILVUM*. Involucres general and partial, many leaved ; petals heart shaped ; fruit nearly oval, compressed, striate.

121. *URASPERMUM*. Involucres few leaved ; central florets barren ; fruit stipitate, oblanceolate, polished, partly hispid.

122. *PASTINACA*. Involucres none ; petals involute, entire ; fruit ellipital, compressed, flat.

123. *SMYRNIUM*. Involucres none ; petals acuminate, carinate ; fruit somewhat compressed, gibbous, striate.

124. *ÆTHUSA*. General involucre none ; partial involucre but half ; fruit roundish ovate, striate.

124. *SISON*. Involucres about four leaved ; umbel of few rays unequal ; petals inflected ; fruit ovate or oblong, striate.

125. *CICUTA*. Partial involucres without the general ; petals somewhat flat ; fruit subovate ; grooved.

Order III. TRIGYNIA. Three styles.

126. *VIBURNUM*. Calyx five parted, superior ; corolla five cleft ; berry one seeded.

127. *SAMBUCUS*. Calyx five parted, superior ; corolla five cleft ; berry three seeded.

128. *RHUS*. Calyx five parted, inferior ; corolla five petalled ; berry one seeded.

129. STAPHYLEA. Calyx inferior, five parted ; petals five ; capsules inflated, connate ; nuts two, globose.

130. SAROTHTA. Calyx five parted ; corolla five petalled ; capsule one celled, three valved.

Order IV. TETRAGYNIA. Four styles.

131. PARNASSIA. Calyx five parted ; petals five ; nectaries five, cordate, crowned with globular headed filaments ; capsule two celled, four valved.

Order V. PENTAGYNIA. Five styles.

132. ARALIA. Flowers umbelled, with involucre ; calyx five toothed, superior ; corolla five petalled ; berry five seeded.

133. LINUM. Calyx inferior, five leaved ; petals five ; filaments coalescing at base ; capsule ten celled, five valved ; seeds solitary.

134. DROSEBA. Calyx five parted, corolla five petalled, inferior ; capsule one celled, three or five valved, opening at top ; seeds many.

135. STATICE. Calyx one leaved, entire, plaited ; petals five ; seed one, invested by the calyx.

PENTANDRIA.

MONOGYNIA.

70. ECHIUM.

ECHIUM VULGARE. L.

Vipers Bugloss.

Stem bristly and tuberculated ; stem leaves lanceolate and rough with stiff hairs ; flowers in lateral spikes. *Sm.*

Stem erect, round, covered with firm bristles standing on little protuberances. Leaves rough, covered with the same kind of bristles. Spikes of flowers axillary, recurved, gradually straightening, bearing a row of crowded purplish flowers.—Road side, Roxbury.—June, July.—Biennial.

71. LITHOSPERMUM.

LITHOSPERMUM OFFICINALE. *L.* *Common Gromwell.*

Seeds smooth; calyx nearly equal to the corolla; leaves lanceolate, acute, veiny.

A rough branching plant introduced from Europe. Leaves entire, rather acute. Flowers small, yellowish, in recurved leafy spikes. Seeds white.—Dry pastures.—June.—Perennial.

LITHOSPERMUM ARVENSE. *L.* *Corn Gromwell.*

Seeds wrinkled; calyx nearly equal to the corolla; leaves obtuse, veinless.

Leaves rough, oblong, obtuse, with only the central vein. Flowers white.—Dry hills, introduced.—Annual.

72. LYCOPSIS.

LYCOPSIS VIRGINICA. *L.* *Virginian Lycopsis.*

Small, hispid; lower leaves spatulate, upper ones linear-oblong, entire; racemes solitary; flowers pedunculated.

A small hairy plant found with *Krigia Virginica* in dry woods and on hills. Root leaves spatulate or obovate, those of the stem oblong, closely sessile or half clasping. Stem erect, square, in the larger ones branched. Flowers in a leafy raceme, each one pedunculated and given off from the side of a leaf. Calyx segments acute, slightly unequal, corolla white or purplish, the segments rounded, the tube contracted at top and bottom, and swelling in the middle. Stamens short, concealed in the tube.—May, June.—Annual.

LYCOPSIS ARVENSIS. *L.* *Wild Bugloss.*

Hispid; leaves lanceolate, repand-toothed; racemes double; flowers sessile.

A very bristly plant with small blue flowers, probably introduced from Europe.—Dry hills.—June, July.

73. CYNOGLOSSUM.

CYNOGLOSSUM OFFICINALE. *L.* *Common Hounds tongue.*

Stamens shorter than the corolla ; leaves broad lanceolate, downy, sessile. *L.*

An erect, downy plant, exhaling an unpleasant odour. Stem about two feet high, round, hairy. Leaves covered on both sides with a greyish down, lanceolate, entire, somewhat waved, the lower ones petioled, upper ones sessile, clasping, inclining to an oblong heart shape. Flowers in several racemes, which are recurved at the end. Calyx downy. Corolla dull purple. Seeds furnished with small hooks serving for their dispersion.—Road side.—Charlestown.—June.—Biennial.

CYNOGLOSSUM AMPLEXICAULE. *Mx.* *Clasping Hounds tongue.*

Hairy ; leaves oval-oblong, the upper ones clasping ; corymb terminal, leafless, on a long stalk.

A tall, erect, hairy plant, with large leaves and a small distant corymb or panicle of handsome flowers. Calyx segments acute, hairy. Corolla purple, hypocrateriform, with oblong, obtuse lobes, the throat crowned.—Woods, Vermont and New-Hampshire.—June.—Perennial.

74. MYOSOTIS.

MYOSOTIS PALUSTRIS. *Pursh.* *Water Mouse ear.*

Perennial ; seeds smooth ; calyx subovate, glabrous, nearly as long as the tube of the corolla ; stem slightly branched, leaves lanceolate.

Syn. MYOSOTIS SCORPIOIDES. First edit.

This plant is by many of our botanists considered a variety of *M scorpioides*. It is found about the edges of ditches and streams. Stem rooting at base, ascending, mostly smooth. Leaves scattered, broad lanceolate, sessile, nearly smooth. Racemes terminal, rolled back at the end. Flowers pointing one way, small, rose coloured.—From June to October.—Perennial.

§ *Subgenus* ROCHELIA. *Seeds echinate.*

MYOSOTIS VIRGINIANA. L. *Virginia Mouse ear.*

Hairy, seeds bristled with hooks, leaves ovate-lanceolate, acuminate, racemes divaricate.

Syn. ROCHELIA VIRGINIANA. R. & S.

Stem erect, furrowed, hairy, with numerous branches. Leaves large, the lower ones petioled, lanceolate, entire, roughish, hairy. Flowers small, in numerous short racemes. Calyx segments oblong, subacute. Corolla white, roundish, entire, as long as the calyx, crowned at the mouth. Seeds covered with short adhering hooks or bearded points.

A weed in cultivated ground and rubbish—July.—Annual.

75. HYDROPHYLLUM.

HYDROPHYLLUM VIRGINICUM. L. *Virginian Hydrophyllum.*

Smooth; leaves pinnatifid and pinnate, the segments oval-lanceolate, cut-serrate; fascicles conglomerate.

Root fleshy, fibrous, very sweet to the taste. Leaves pinnate; leaflets ovate, cut and toothed acuminate, nearly smooth, the upper ones running together. Petioles clasping the stem. Stem a foot high, somewhat semi-cylindrical. Flowers in a crowded tuft at the top. Segments of the calyx linear, pectinate with hairs. Corolla bluish white, bell shaped, divided into five obtuse segments, having each a triangular bivalved nectariferous cavity running down its inside. Stamens twice as long as the corolla. Germ covered with close, erect hairs. Style as long as the stamens, bifid at top.—On the sides of the Ascutney mountain, Windsor, Vermont.—June.—Perennial.

HYDROPHYLLUM CANADENSE. L. *Canadian Hydrophyllum.*

Leaves simple, lobed, angular, flowers in crowded fascicles.

Leaves large and broad, somewhat palmate, about seven lobed, cut and toothed. Flowers much as in the preceding.—Collected in the western part of the state.

76. ANAGALLIS.

ANAGALLIS ARVENSIS. L. *Scarlet Pimpernel.*

Leaves ovate, dotted beneath; stem procumbent.
Sm.

A humble but very delicate flower. Stem square, procumbent. Leaves ovate, covered on the under side with purple dots. Flowers on axillary footstalks, bright scarlet. Capsule spherical, bursting crosswise, a character at any time ascertained by pressing it. In England it has received the name of "Poor man's weather glass," from the circumstance that the flowers close in bad weather, being very sensible to changes of the air.—Common at South Boston.—June and after.—Annual.

77. LYSIMACHIA.

LYSIMACHIA THYRSIFLORA. L. *Tufted Loosestrife.*

Racemes lateral, pedunculated.

Syn. LYSIMACHIA CAPITATA. Pursh.

Stem simple, smooth. Leaves sessile, opposite, lanceolate, acute, somewhat revolute at the edges, paler and somewhat downy beneath. Flowers small yellow in short rounded racemes or heads supported by axillary peduncles. The American plant does not appear to me to differ from the European. The segments of the corolla and stamens often vary to six and seven, as in the European.—Swamps.—June.—Perennial.

§ *Subgenus SELEUCIA. Capsule five valved, intermediate barren filaments five.*

LYSIMACHIA CILIATA. L. *Heart leaved Loosestrife.*

Leaves opposite, heart-oval, petioles ciliated, flowers chiefly in pairs, drooping.

This *Lysimachia* is distinguishable from the subsequent species by its broader leaves obtuse at base, and its larger flowers. It rises from one to two feet in height, gives off opposite, oblong, pointed leaves somewhat heart shaped at base. The upper pairs, which have flowers in their axils, are so near together as to appear quaternate. Petioles fringed with hairs extending round the stem. Flowers in pairs, crossing so near as to appear whorl-

ed in fours, yellow. Calyx acute; segments of the corolla ovate, toothed and mucronated, covered with minute glands at base. Anthers sagittate, obtuse; filaments shorter than the anthers, inserted in a glandular ring at the base of the corolla, with five intermediate, subulate, filamentous bodies covered with glandular pubescence. Germ globose, style straight, stigma simple. Capsule five valved.—Grows on Chelsea beach island.—June, July.—Perennial.

LYSIMACHIA HYBRIDA. *Mich.* *Hybrid Loosestrife.*

Leaves opposite, petioled, lanceolate, acute at base; flowers drooping.

A more common species than the last, which it resembles. Stem erect, with opposite branches. Leaves of the stem long, reflexed, narrow, tapering at both ends. Petioles ciliate as in the former species, the row of hairs extending round the stem. The flowers in every respect resemble those of the preceding species, and indeed I can observe no permanent difference except in the form of the leaves, which are narrow and lanceolate.—Grows among the grass in wet meadows, Roxbury, flowering in July.

§§ *Subgenus CASSANDRA.* *Capsule five valved, verrucose; stamens monadelphous, two long and three short.*

LYSIMACHIA QUADRIFOLIA. *L.* *Four leaved Loosestrife.*

Leaves in fours, nearly sessile, peduncles in fours, one flowered. *L.*

A plant of singular regularity, having its long simple stem surrounded by whorls of four oval-lanceolate leaves, with the same number of yellow flowers on capillary footstalks in their axils. Calyx segments acute, half as long as the corolla. Segments of the corolla entire, acute, spotted at base. Stamens unequal, two long and three short, united at base, and covered with glandular hairs. Germ globose, dotted. Style straight. Capsule spherical, five valved, punctate with black warts.—Sometimes the number of flowers and leaves in a whorl varies to three or five.—Every where in low ground.—June.

LYSIMACHIA STRICTA. *Ait.* Upright Loosestrife.

Racemes terminal ; petals lanceolate, spreading ; leaves lanceolate, sessile. *Ait.*

Syn. *LYSIMACHIA RACEMOSA.* *Lam. Mich.*

LYSIMACHIA BULBIFERA. *Curtis.*

A very elegant species, its long, upright raceme appearing like a hollow cylinder of flowers. Stem erect, smooth. Leaves glabrous, dotted, acute. Raceme often half a foot in length. Flowers on horizontal, capillary footstalks an inch in length. Calyx acute. Segments of the corolla lanceolate, yellow, black at base. Filaments pubescent, monadelphous, three short and two long ; anthers sagittate. Germ globose, style ascending, longer than the stamens ; capsule five valved. This species produces stem bulbs in the axils of the leaves.—Low grounds.—July.—Perennial.

78. SABBATIA.

SABBATIA CHLOROIDES. *Ph.* *Sabbatia.*

Slender, leaves lanceolate, erect ; branches few, one flowered ; flowers ten or twelve parted, calyx segments linear, shorter than the corolla.

Syn. *CHLORA DODECANDRA.* *L.*

CHIRONIA CHLOROIDES. *Mx.*

Stem a foot or more in height, erect, smooth, four angled, with opposite branches, the branches often higher than the stem and dichotomous. Leaves opposite, short, smooth, clasping, lanceolate, entire, erect. Flowers large, solitary on long peduncles. Calyx divided into about twelve linear segments. Corolla much larger than the calyx, divided to the base into about ten segments, which are oblong, obtuse, red, with a large yellow spot at base, edged with brown. Stamens about twelve, anthers yellow, oblong-linear, rolled up at the tip as they grow old. Germ oval, style declined, stigmas two, linear, as long as the style, slightly twisted. The parts of the flower are very variable in number.—Plymouth, wet ground.—June.—Biennial.?

79. HOTTONIA.

HOTTONIA INFLATA. *Ell.**Inflated Hottonia.*

Leaves pinnatifid, peduncles inflated, jointed, many flowered.

Stem immersed, round, fragile, sending out roots. Leaves in a whorl at or near the surface of the water, pinnatifid with linear segments. The peduncles which constitute the most conspicuous part of the plant grow several together in a sort of umbel. They are from half a foot to a foot long, pubescent, jointed, and inflated between the joints to nearly the size of the little finger. Within they are smooth and empty. Flowers in numerous whorls with short stalks, and linear, obtuse bractes exceeding them in length. Calyx segments linear, obtuse, persistent. Corolla white, very small, hypocrateriform, the tube a little swelling, the segments obtuse or slightly emarginate. Stamens very short, converging, inserted in the tube of the corolla opposite the segments. Anthers roundish, two lobed. Germ subglobular; style short, erect; stigma globose. Capsule one celled, five valved. Receptacle globular. Seeds minute oval, shining, red, with a blackish tip.—Grows in ditches at Milton and Dorchester.—June.—Perennial.

80. MENYANTHES.

MENYANTHES TRIFOLIATA. *L.**Buck Bean.*

Bigelow, Medical Botany, Pl. xlvi.

Leaves ternate. *L.*

The root of this plant penetrates horizontally in the bog earth to a great distance. It is regularly intersected with joints at the distance of about half an inch from each other, these joints being formed by the breaking off of the old petioles and their sheaths. The leaves proceed from the end of the root on long stalks, furnished with broad sheathing, stipules at base. They are trifoliate, nearly oval, glabrous, somewhat fleshy, and slightly repand, or furnished with minute irregularities at the edge, which hardly prevent them from being entire. Scape round, ascending, smooth, bearing a conical raceme of flowers. Peduncles straight, scattered, supported by ovate, concave bractes. Calyx erect, subcampanulate, five parted, persistent. Corolla funnel shaped,

tube short, border five cleft, spreading and at length revolute, clothed on the upper part with a coating of dense, fleshy, obtuse fibres. The colour in the Amer. variety is generally white, with a tinge of red, particularly on the outside. Stamens five, shorter than the corolla, and alternate with its segments; anthers, oblong arrow-shaped. Germ ovate; style cylindrical, persistent, as long as the corolla; stigma bifid, compressed. Capsule ovate, two valved, one celled. Seeds numerous, minute, attached to two lateral receptacles.—Margins of ponds and brooks, Cambridge.—May.—Perennial.

81. VILLARSIA.

VILLARSIA LACUNOSA. *Vent.**Common Villarsia.*

Leaves heart shaped, angular behind, entire, pitted beneath; umbels on the petioles; corollas glabrous.

*Syn. VILLARSIA AQUATICA. Gmel.**MENYANTHES TRACHYSERMA. Mich.*

An aquatic with small floating leaves. The petioles are very slender and flexible. Leaves one or two inches in diameter, heart shaped, the lobes somewhat angular, like those of *Nymphaea odorata*; entire, smooth, dotted underneath. Flowers small, white in umbels growing on the side of the petiole, about half an inch below the leaf. The umbel is generally immersed in the water, but one or more flowers rise above the surface, and expand each day. Calyx in five lanceolate acute segments. Corolla five parted, emarginate and curled upon the margin. Anthers inserted at the divisions of the corolla, separated by small glandular bodies upon pedicels, which appear like stamens and may occasion a mistake in the class. Germ oval. Style short, erect. At the place of the umbel is frequently a knot of solid, oblong, acute bodies, resembling stem bulbs, and tending downward.—Fresh pond.—July.

This species appears somewhat different from *V. cordata* and *V. trachysperma* of Elliott.

82. CONVULVULUS.

CONVULVULUS SEPIUM. *L.**Large Bindweed.*

Leaves arrow shaped with the posterior lobes trun-

eated ; peduncles square, one flowered ; bractes heart shaped, close to the flower. *Sm.*

Syn. CALYSTEGIA SEPIUM. Pursh.

The American variety of *Convolvulus sepium* is one of the finest of the genus. It climbs about fences and bushes in low ground, its large red and white blossoms expanding in June and July. Stem twining, a little angular, smooth. Leaves large, arrow shaped, the hinder lobes cut off, particularly in the upper leaves. Flower stalks square, axillary, bearing a pair of heart shaped bractes so close to the flower as to appear like its calyx.—Perennial.

CONVOLVULUS ARVENSIS. L. *Small Bindweed.*

Leaves arrow shaped, the lobes acute ; flowers generally solitary ; bractes minute, remote from the flower. *Sm.*

Not more than half the size of the last. Stems numerous, twining. Leaves arrow or halbert shaped, with acute lobes. Peduncles angular, with a pair of very small acute bractes about their middle. Flowers nearly white.—Dorchester.—June.

CONVOLVULUS STANS. Mx. *Downy Bindweed.*

Erect, downy ; leaves oblong lanceolate, hearted, acuminate ; peduncles elongated, one flowered ; bractes ovate, acute ; segments of the calyx lanceolate ; stem flowering below.

Syn. CALYSTEGIA TOMENTOSA. Pursh.

About half a foot high with leafy branches, never twining. From the lower part of the stem proceeds a long peduncle, (sometimes two,) bearing a large white flower.—In dry woods, Fryeburg, Maine—July.

33. DATURA.

DATURA STRAMONIUM. L. *Thorn Apple.*

Bigelow, Medical Botany, Pl. i.

Capsules thorny, erect, ovate ; leaves ovate, angular, smooth.

Stem erect, simple at bottom, much branched at top by repeated forks, smooth or slightly pubescent, hollow in the large plants, often solid in small ones. Leaves given off from the forks of the stem, five or six inches long, acute, irregularly sinuated and toothed, with large acute teeth and round sinuses, the sides of the base extending unequally down the petiole. Flowers single, axillary, on short stalks, erect or nodding. Calix composed of one leaf, tubular, with five angles, and five teeth, deciduous by breaking off from its base. Corolla funnel shaped with a long tube, five angled, its margin waved and folded, and terminating in five acuminate teeth. Stamens growing to the tube by their filaments, with oblong, erect anthers. Germ superior, hairy with the rudiments of spines, ovate; style as long as the stamens; stigma obtuse, parted at base. Capsule as large as a small hen's egg, ovate, fleshy, covered with thorns, four valved, four celled, opening at top. Seeds numerous, reniform, black, attached to a longitudinal receptacle, which occupies the centre of each cell.—Among rubbish.—August, September.—Annual.

A variety much more common than the last, and considerably larger in size, has a uniformly hollow stem, purple, covered with light dots; the flowers light purple or blue, striped on the inside. It answers in every respect to the description of *Datura tatula*, as laid down in botanical books. I incline to think the two species should be incorporated into one, if there are no better discriminating marks than those usually laid down. The dots in the purple cuticle of the American plant do not appear to result from warts, or any inequalities in its structure, but simply from variation of colour. The sensible qualities of the two varieties are the same.

It must be remarked however, that both the plants here described differ from the representations in the English Botany, and in Woodville's Medical Botany; 1st, in the form of the anthers, which are very oblong, four times longer than broad; 2d, in the stigma, the sides of which are parallel; 3d, in the dissepiment of the capsule which is thin, about one quarter the thickness of the valves.

The poisonous properties of this plant, as well as its application to medicine, are well known. As a remedy in asthma it has acquired great reputation.

84. HYOSCYAMUS.

HYOSCYAMUS NIGER.

Henbane.

Bigelow, Medical Botany, Pl. xvii.

Lower leaves sinuated and clasping ; flowers sessile.

Of the natural order of *lurida* like the last, equally poisonous, and of no less utility in medicine. The whole herb has a glaucous or sea-green colour, is hairy and viscid, and emits a rank offensive smell. The stalk is one or two feet high, round branching and rigid. The first leaves spread upon the ground, and have some resemblance to a young thistle. They are large, oblong, frequently contorted, clasping, cut into acute lobes, and pointed ; the upper ones generally entire.

The flowers form a revolute, one sided spike at the end of the stem or branch, leaving, as they fall off, a straight row of capsules. The calyx has five short acute segments. The corolla is funnel shaped, irregular, with five spreading, obtuse segments, of a pale yellow or straw colour, with a beautiful net work of purple veins. Stamens inserted in the tube of the corolla, with large oblong anthers. Style slender, longer than the stamens, declined with an obtuse stigma. Capsule two celled, roundish, covered with a lid, and invested with the persistent calyx, the segments of which extend beyond it, and become rigid and prickly. The seeds are numerous, small, unequal, brownish, and are discharged by the horizontal separation of the lid.—Road sides, &c.—June and July.—Biennial.

85. VERBASCUM.

VERBASCUM THAPSUS. L.

Common Mullein.

Leaves decurrent, woolly on both sides ; stem simple. L.

Every body knows this tall, woolly, and very common plant. Stem erect, straight, woolly, winged by the decurrent base of the leaves. Leaves exceedingly woolly on both sides, ovate-lanceolate, sessile, slightly serrate or waved on the margin. The stem terminates in a long, thick, cylindrical spike, with handsome five parted yellow flowers.—Dry pastures.—July, August.—Biennial.

VERBASCUM BLATTARIA. L. *Moth Mullein.*

Leaves clasping, oblong, glabrous, serrate; peduncles one flowered, solitary.

Two or three feet high. Leaves smooth, oblong, obovate, doubly serrate, the radical ones somewhat lyrate. Flowers in a long, terminal raceme, pedunculated, yellow or white, marked with purple. Stamens covered with purple hairs.—Road sides, not common.—Annual.

86. AZALEA.

AZALEA NUDIFLORA. L. *Naked Azalea.*

Flowers naked; leaves lanceolate-oval, pubescent, the nerve hairy; corolla hairy; stamens much longer than the tube.

An exceedingly beautiful shrub with rose coloured flowers. I have never seen it wild very near to Boston, but have observed it in woods in Worcester, Princeton, Douglas, &c. Several varieties occur in the length and colour of the flowers.—June.

AZALEA VISCOSA. L. *Wild Honeysuckle, Swamp Pink.*

Leaves with a rough margin; corollas viscid, hairy; stamens but little longer than the corolla. L.

A fine flowering shrub, very common among the brushwood in low land. The small branches and peduncles are commonly more or less bristly. Leaves crowded, lance-obovate, nearly entire, ciliated, hairy on the midrib and margin. Flowers in terminal, umbel-like corymbs. Corollas funnel shaped, varying in colour, but commonly white, hairy and glutinous on the outside.—June, July.

Several varieties occur in the colour of the leaves, parts of the flower and small branches. The leaves are sometimes quite glaucous.

AZALEA PROCUMBENS. L. *Procumbent Azalea.*

Leafy flowered; stems diffusely procumbent; leaves opposite, elliptical, glabrous, revolute at the margin; corollas campanulate, glabrous; filaments equal included.

Cæspitose. Stems procumbent, spreading in tufts. Leaves opposite, oblong, obtuse, strongly revolute at the edges, upper side glabrous, green, under side glaucous and nearly concealed by the edges and midrib. Flowers axillary, peduncles red. Calyx leaves ovate, subacute. Corolla purple, campanulate, the segments ovate, tapering to an obtuse point, glabrous. Stamens longer than the tube, filaments white with roundish black anthers. Style erect, longer than the stamens; stigma two parted.—On the alpine summits of the White mountains, N. H.—July.

AZALEA LAPPONICA. L.

Northern Azalea.

Leaves oblong oval, pitted; stamens irregular in number.

Syn. RHODODENDRON LAPPONICUM. Wahl.

A beautiful, low, alpine shrub. Leaves coriaceous, evergreen, scattered, oblong-oval, covered above with fine white pits, the under surface paler and dotted with black. Flowers subumbelled. Peduncles and calyx red, covered with light green glands. Segments of the calyx ovate, ciliate. Corolla deep purple, campanulate with oblong, obtuse segments. Stamens from five to ten curved, with purple filaments and oblong green anthers. Style longer.—On the alpine regions of the White mountains, New-Hampshire.—July.

Wahlenberg refers this shrub to *Rhododendron*, with which its habit certainly agrees. The variable number of stamens leaves it doubtful between that genus and *Azalea*.

37. DIAPENSIA.

DIAPENSIA LAPPONICA. L.

Northern Diapensia.

Cæspitose, flowers pedunculated.

A hardy cæspitose plant found only in northern latitudes or on high mountains, forming dense solid tufts in the crevices of the rocks, and flowing within a few inches of the snow and ice. Stems short, diffuse, concealed in the leaves. Leaves crowded, linear obtuse, fleshy, evergreen. Calyx leaves five, oblong, obtuse. Corolla hypocrateriform, white, the border in five flat segments. Stamens inserted in the tube. Style exerted; stigma obtuse.

On the highest summit of the White mountains, where it

forms moss-like tufts among the rocks, beautifully spangled in July with showy white flowers.—Perennial.

88. SOLANUM.

SOLANUM DULCÁMARA. *L.* *Bittersweet, Woody Nightshade.*

Stem shrubby, flexuous, without thorns; upper leaves hastate; clusters cymose. *Sm.*

Bigelow, Medical Botany, Pl. xviii.

Stem woody, climbing upon fences and bushes. Lower leaves heart shaped, entire; upper ones ovate, furnished with two ears at the base giving them a hastate form. Clusters on the sides and ends of the stem, on branching and spreading stalks, drooping. Flowers with five acute, spreading or reflexed, purple segments. Anthers forming a yellow tube projecting from the flower. Berries oval, bright red. This plant is common in low grounds, by the side of brooks, &c. As a medicinal article it holds a place in most dispensaries—July.

SOLANUM NIGRUM. *L.* *Black Nightshade.*

Stem herbaceous, without thorns; Leaves ovate, bluntly toothed and waved. Umbels lateral, drooping. *Sm.*

Much more ordinary in its appearance than the last. Stem erect, branching, angular and sometimes winged. Leaves ovate alternate. The umbels come out from the sides of the stem, remote from the leaves. They consist of drooping white flowers, with yellow anthers. Berries round, black. This variety was probably imported from Europe. It grows among rubbish, and has the aspect and reputation of a poisonous plant.

89. SAMOLUS.

SAMOLUS VALERANDI. *L.* *Water Pimpernel.*

Leaves obtuse, raceme many flowered, pedicels bracteolate.

A smooth plant about a foot high. Stem erect, round. Leaves alternate, subsessile, obovate, obtuse, entire, those of the root petioled. Racemes terminal, many flowered. Pedicels often two together, one flowered, geniculate, with a small lanceolate

bracte at the bend. Flowers small, white.—Brooksides.—July.—Perennial.

90. CAMPANULA.

CAMPANULA PERFOLIATA. *L.* *Clasping Bell flower.*

Stem simple ; leaves heart shaped, toothed, clasping ; flowers sessile, aggregate. *L.*

Syn. CAMPANULA AMPLEXICAULIS. Mich.

Found by the road side in Medford and elsewhere. Stem erect, leafy, angular, slightly pubescent. Leaves small, alternate, reniform-heart shaped, tooth-crenate, clasping the stem. Flowers axillary, sessile. Segments of the calyx lanceolate, very acute, with a distinct middle rib. Corolla blue, spreading.—June.—Annual.

CAMPANULA ERINOIDES. *L.* *Slender Bell flower.*

Stem triangular, the angles rough backward ; leaves linear-lanceolate ; flowers terminal.

Syn. CAMPANULA FLEXUOSA. Mich.

Found in meadows among the high grass, supporting itself like a Galium on surrounding plants. Stem from eight to twenty inches in height, very slender and flexible, uniformly triangular, the angles rough with minute reflexed prickles. Leaves given off successively from the three sides, linear, sessile, nearly entire, the midrib and margin rough backward. A variety occurs with lanceolate leaves with a few minute teeth. Branches few, near the top, axillary, leafy, one or two flowered. Flowers small, terminal. Corolla very small, twice or thrice the length of the calyx, deeply five cleft, white with pale blue veins. Filaments valve like, hairy. Stigma trifid. Capsule globular, three celled.—Found at Medford and Brighton. Variety 2d at Sudbury.—June, July.

91. LOBELIA.

LOBELIA CARDINALIS. *L.* *Cardinal flower.*

Stem erect ; leaves broad-lanceolate, serrate ; spike terminal, pointing one way. *L.*

This superb plant, cultivated and much prized in Europe, is a

native of our meadows and brooksides. It rises to the height of two feet and upward, with a simple, erect, leafy stem. Leaves alternate, ovate-lanceolate, acuminate, and serrate. Raceme terminating the stem, consisting of large flowers, more or less inclining to one side, of a bright scarlet colour. Corolla with a long tube ending in five spreading segments, the three lower ones widest. Tube of stamens curved in at the top.—June, July.—Perennial.

LOBELIA PALLIDA. *Muhl.* *Pale Lobelia.*

Somewhat hairy; stem erect, simple; leaves oblong-spatulate, dentate; flowers spiked.

Syn. LOBELIA SPICATA. Lam.

Stem upright, smooth, or a little hairy. Leaves spatulate, obtuse at the end, tapering at base, slightly toothed or crenate, pubescent at the edge and under side, sessile. Flowers in a long terminal spike, on short peduncles, blue.—Moist pastures and road sides.—July.—Perennial.

LOBELIA KALMII. *L.* *Kalms Lobelia.*

Slender erect, simple; radical leaves spatulate; stem leaves linear, very slightly toothed; flowers alternate, remote, pedicelled.

Found in the western parts of the state. More slender and delicate than any of the others. Flowers blue.—July.

LOBELIA INFLATA. *L.* *Indian Tobacco.*

Bigelow, Medical Botany, Pl. xix.

Branching and hairy. Leaves serrate, ovate; capsules turgid.

This plant varies in height from six inches to two or three feet. The small plants are nearly simple, the large ones much branched. Root fibrous. Stem erect, in the full sized plant much branched, angular, very hairy. Leaves scattered, sessile, oval, serrate, veiny and hairy. Flowers in spikes or racemes, pedunculated, each one in the axil of a small leaf. Segments of the calyx linear, acute, standing on the germ, which is oval and striated. Corolla bluish purple, the tube prismatic and cleft above, the segments spreading, acute, the two upper ones

lanceolate, the three lower ones oval. Anthers collected into an oblong, curved body, purple; filaments white. Style filiform; stigma curved and inclosed by the anthers. Capsules two celled, turgid, oval, compressed, ten angled, covered with the calyx. Seeds numerous, small, oblong, brown.—Fields and road sides.—Midsummer.—Annual.

The whole plant operates as a violent emetic.

LOBELIA DORTMANNA. *L.* *Water Lobelia.*

Leaves linear, two celled, entire; stem nearly naked. *L.*

A very singular aquatic plant. The leaves grow in a single tuft at the bottom of the water. They are from one to three inches long, recurved, blunt, and of a fleshy appearance. On cutting them across, they are found to consist of two empty parallel tubes. The stem rises out of water, bearing a few remote pendulous flowers of a pale blue colour. Segments of the calyx acute, persistent. Tube of the corolla prismatic, its segments lanceolate. Capsule partly superior and inferior, tipped with the style, two celled. Seeds numerous, ovate, compressed, black. The whole plant gives out a milky juice on being broken.—Found in Fresh pond.—July.

92. LONICERA.

LONICERA PARVIFLORA. *Small yellow Honeysuckle.*

Whorls of the spike subsessile; corollas short, ringent, gibbous at base; filaments bearded; leaves all connate, glaucous beneath, deciduous, the upper ones perfoliate, and much exceeding the flowers.

Syn. LONICERA DIOICA. *L.*

An erect shrub with pale, rough bark. Leaves oblong, undulate and revolute at the edge, white-glaucous underneath, mostly sessile, the upper ones connate. Flowers in a terminal head or whorl. Germs aggregate, ovate, supporting a minute calyx of five subacute teeth. Corolla yellow, the tube gibbous at base, the border irregular, with its segments commonly curled or revolute at the edge. Stamens exerted, as long as the segments of the corolla, smooth above, growing to the corolla, and slightly

hairy below. Style nearly as long as the stamens, curved; stigma capitate.—Found in woods in the western parts of the state. June.

LONICERA HIRSUTA. Eaton. *Hairy Honeysuckle.*

Corollas ringent, hairy; filaments bearded; leaves hairy, the lower ones obovate, upper ones connate.

Syn. CAPRIFOLIUM PUBESCENS. Goldie, *Edin. Journal.*

A woody vine said to twine upon trees to the height of twenty or thirty feet. My specimens, given me by Mr. Eaton half a dozen years since, and published in his *Manual*, are very hairy; the leaves obovate, finely ciliate, some of them abruptly acuminate, the upper ones roundish and connate. Flowers yellow, larger than in the last species.—Woods, Williamstown. Said to grow also in Worcester.—June.

93. XYLOSTEUM.

XYLOSTEUM CILIATUM. *Fly Honeysuckle.*

Berries distinct, leaves ovate, subcordate, slightly ciliate; corollas slightly spurred, the tube ventricose, segments short, acute; style exerted.

Syn. XYLOSTEUM TARTARICUM. Mx.

LONICERA CILIATA. Muhl.

A shrub with opposite leaves and yellow funnel shaped flowers hardly an inch long. Leaves thin, ovate, a few heart shaped at base, slightly ciliate, somewhat pubescent when young. Flowers in pairs with a nectariferous projection on one side of the base. Berries in pairs, ovate.—Woods, Vermont, New-Hampshire.—May, June.

XYLOSTEUM VILLOSUM. *Hairy Fly Honeysuckle.*

Berries connate, young branches villous; leaves oblong, obtuse, hairy on both sides; peduncles short.

A much smaller shrub than the preceding, with very obtuse, oblong or obovate leaves. These, when young, are quite hairy, but grow smoother by age. Flowers yellow, about half as long as in the preceding, germs united, styles exerted. Berries in pairs, united at base. Sent from Williamstown by Professor

Dewey.—Found on the borders of alpine ponds on the White mountains by Mr. Greene.—June, July.

94. DIERVILLA.

DIERVILLA CANADENSIS. *Muhl.* *Yellow Diervilla.*

Racemes terminal; leaves serrate.

Syn. LONICERA DIERVILLA. *L.*

This shrub with us is usually of small size. Leaves opposite, on short petioles, ovate, smooth, serrate, acuminate. Flowers of a pale yellow; small, funnel shaped, with five roundish, unequal segments. They grow in the axils of the upper leaves.—Woods, Cambridge, Brookline.—June.

95. TRIOSTEUM.

TRIOSTEUM PERFOLIATUM. *L.* *Fever root.*

Bigelow, Medical Botany, Pl. ix.

Leaves connate, flowers sessile, whorled.

Syn. TRIOSTEUM MAJUS. *Mx.*

The root of this plant is perennial and subdivided into numerous horizontal branches. The stem is erect, hairy, fistulous, round, from one to four feet high. Leaves opposite, the pairs crossing each other, connate, ovate, acuminate, entire, rather flat, abruptly contracted at base into a sort of neck, resembling a winged petiole, of variable width. In general this is narrow when the plant is in flower, and wider when it is in fruit. The flowers are axillary, sessile, five or six in a whorl, the upper ones generally in a single pair. Each axil is furnished with two or three linear bractes. The calyx consists of five segments which are spreading, oblong-linear, coloured, unequal, persistent. Corolla tubular, curving, of a dull brownish purple, covered with minute hairs, its base gibbous, its border open and divided into five rounded, unequal lobes. Stamens inserted in the tube of the corolla; stigma peltate. The fruit is an oval berry of a deep orange yellow, hairy, somewhat three sided, crowned with the calyx, containing three cells, and three hard, bony, furrowed seeds, from which the name of the genus is taken.—Woods, Sweet Auburn, Cambridge.—June.—Perennial

The root is medicinal.

96. RIBES.

RIBES TRIFLORUM. *Willd.* *Wild Gooseberry.*

Thorn subaxillary ; leaves smooth, three or five lobed, cut-toothed ; peduncles about three flowered ; pedicels elongated ; petals spatulate, undulate, style hairy, semibifid, exserted ; berries smooth. *Willd.*

The buds of this species produce at flowering time a small tuft of leaves with two or three bell shaped flowers. Petioles ciliate. Leaves smooth above, pubescent beneath. Calyx green, its segments reflexed. Petals white, erect, nearly truncated, curled. Style hairy below, smooth above. Fruit somewhat resembling the common gooseberry.—Woods.—May.

RIBES RIGENS. *Mx.* *Mountain Currant.*

Unarmed, leaves lobed and toothed, the veins pubescent beneath ; racemes erect, lax, berries hispid.

Stems procumbent, rooting. Leaves mostly five lobed, toothed, smooth on both sides, the veins of the younger ones pubescent beneath. Racemes erect, the peduncles and germs covered with glandular hairs. Calyx hemispherical, the segments patulous, greenish, with purple striæ. Petals wedge shaped, shorter than the calyx. Stamens converging, anthers black. Style as long as the stamens, bifid. Berries hairy.

The berries, when bruised, have the odour of *Ictodes fœtidus*.

On the Wachusett, Monadnock, and White mountains.—June.

RIBES FLORIDUM. *l'Herit.* *Large flowering Currant.*

Unarmed ; leaves dotted on both sides ; racemes pendulous ; flowers cylindrical ; bractes longer than the germ. *Willd.*

This is a common, wild currant, having its leaves generally in five lobes, toothed at the edge, and covered on both surfaces with small, whitish, glandular points, just visible to the naked eye. Petioles fringed with compound hairs. Racemes pendulous, downy, many flowered. Calyx tubular-campanulate, with recurved segments. Petals greenish white, straight, a little reflexed at point. Fruit black, watery and insipid.—Woods.—May.

RIBES CYNOSBATI.

Prickly Gooseberry.

Subaxillary thorns about two ; leaves lobed, cut and toothed, downy ; racemes nodding, few flowered ; calyxes erect, campanulate ; fruit prickly.

Subaxillary spines from one to three. Petioles downy. Leaves soft and downy on both sides, cleft into three or five lobes, which are cut and toothed. Racemes few flowered. Calyx whitish, bell shaped, contracted at the mouth, the segments reflexed. Petals very small, obovate ; germ hispid. Berry covered with long prickles so as to resemble a burr.—Woods.—Walpole, Hanover, N. H.—June.

RIBES LACUSTRE. *Pers.**Swamp Gooseberry.*

Subaxillary thorns few ; stem hispid-aculeate ; leaves divided into lobes beyond the middle ; petioles villous ; berries racemose, hispid.

A handsome shrub with dissected leaves. The older branches are smooth with one or more deflexed axillary spires. Young branches hispid with small reflexed prickles. Petioles slender, villous, with fine scattered hairs. Leaves deeply five lobed, the lobes cut and toothed, like those of some Geraniums. Peduncles slender, hispid. Fruit on rather long pedicels, hispid.—In the *Notch* of the White mountains, by the side of the *Saco river*.

97. CEANOTHUS.

CEANOTHUS AMERICANA. *L.**Jersey Tea.*

Leaves heart-ovate, acuminate, triply nerved ; panicles axillary, elongated. *Willd.*

A small white flowering shrub, not unfrequent in dry or sandy soils. Leaves two or three inches long, and one broad, finely serrate and tapering into a long point. From the axils of the upper leaves come out leafless branches bearing crowded bunches of minute white flowers, on very slender white pedicels. Calyx segments five, inflexed between the petals. Petals hooded at the end, on slender claws which project, together with the stamens, between the segments of the calyx. Nectary a small dark green circle around the germ. Stamens opposite the pe-

tals, bent inward at first, finally erect. Germ triangular, style three cleft. Fruit a dry, three celled, blackish, somewhat triangular berry, growing in close bunches.

The leaves were used, among other substitutes, for tea, during the American revolution.—Flowers in June.

* *CEANOTHUS OVALIS.*

Oval Ceanothus.

C. foliis ovalibus, glanduloso-serratis, triplinerviis, nervis pubescentibus; paniculis corymbosis, abbreviatis.

Leaves oval with glandular serratures, three nerved, the veins pubescent underneath; panicle corymbose, abbreviated.

Leaves from one to three inches long, petioled, elliptical, sometimes oblong, obtuse or subacute, crenately serrate, the serratures tipped with small black glands which are most conspicuous in the young leaves, the veins slightly pubescent beneath, and sometimes the under surface covered with glands. Peduncles or flowering branches shorter than in the last species; often very short. Flowers larger than in the last, in short hemispherical panicles resembling corymbs, white. Fruit blackish.—On the shores of Lake Champlain, gathered by Mr. Boott.

Very distinct from *C. intermedius* of Elliott and Pursh, and much larger.

93. CELASTRUS.

CELASTRUS SCANDENS. L. Climbing Staff tree. Wax work.

Unarmed; leaves oblong, acuminate, serrate; racemes terminal; stem twining. *Willd.*

A strong woody vine, twining round small trees and climbing to a great height. Flowers of a greenish white, in small racemes on the ends of the young shoots. The fruit is a berried capsule. When ripe, the three valves turn backward, disclosing a bright scarlet berry. The valves are of a light red colour, partitioned in the middle and finally waved on the edge.—About fences and thickets.—June.

99. VITIS.

VITIS LABRUSCA. *Common wild Grape Vine.*

Leaves heart shaped, somewhat three lobed, dentate, downy underneath. *Willd.*

This vine is diœcious, a fact which Michaux affirms of all the species observed by him in America.* The leaves are very broad and white underneath. Flowers small, greenish, in panicles made up of small umbels opposite to leaves, as are also the tendrils. Fruit large, purple, and pleasantly flavoured. Found in woods in low ground.—June.

VITIS HEDERACEA. *Willd.* *Common Creeper.*

Leaves quinate, ovate, acuminate, dentate. *Willd.*

Syn. HEDERA QUINQUEFOLIA. L.

VITIS QUINQUEFOLIA. Lam. & Sm.

AMPELOPSIS QUINQUEFOLIA. Mich.

The common creeper is much cultivated as an ornament of walls. The stems climb to a great height, supported by radiating tendrils. Leaves in fives, petioled, smooth. Flowers in branched clusters; petals green, not united at their summit. Berries of the size of peas.—Found growing wild in woods and about fences.—June.

100. IMPATIENS.

IMPATIENS NOLI TANGERE. *Mich. β.* *Touch me not.*

Flower stalks solitary, many flowered; leaves ovate; joints of the stem swelling. *L.*

Syn. IMPATIENS MACULATA. Muhl.

IMPATIENS FULVA. Nuttall. ?

Found about brooks and in moist shades, flowering from June to September. The flowers are of a tawny yellow, spotted on the inside, and resembling small cups or pitchers, hanging on slender footstalks. Nectary horn shaped; petals spreading, the two lower ones large. The capsule, when ripe, bursts and scatters its seeds by an elastic power like the common balsamine of the gardens, another of the genus. Height of the plant about

* Excepting those placed in his genus *Ampelopsis*.

two feet; stems succulent, smooth; leaves ovate, toothed.—Annual.

101. VIOLA.*

VIOLA LANCEOLATA. L.

Spear leaved Violet.

Stemless; root creeping; leaves lanceolate, flowers white.

Root creeping and fibrous. Leaves lanceolate, varying in width, smooth, crenate, somewhat obtuse. Petioles semicylindric, variable in length. Scape tetragonous with two acute bractes near the middle. Calyx mostly acute. Petals white, greenish at base, the lower and sometimes the two lateral ones striate with purple, the two lateral ones bearded or smooth.—Common in wet meadows.—May.—Perennial.

VIOLA BLANDA. Willd.

Sweet scented white Violet.

Stemless; root creeping; leaves heart shaped and ovate, smooth; flowers white.

Root fibrous and in the older plants creeping; leaves smooth and crenate, sometimes broad heart shaped with a deep sinus, at others ovate with the base truncate or acute. Petioles semicylindrical. Scape and bractes as in the preceding species. The flowers exactly resemble those of the former species, both being

* The great attention which this genus has received from botanists, especially in this country, may be attributed to the early and almost simultaneous period when most of its species are in flower, and when there is less to attract botanical notice than at other seasons. Most of the species are changeable and polymorphous, and the attention which has been paid them has resulted in a multiplication of names, considerably exceeding the real species. Unfortunately the characters used by botanists to distinguish the species, are most of them more liable to variation, than in other plants. For example, the width of the leaves and the form of their base are often liable to vary; the cucullation, or rolling in, is a character common to most of the genus; the pubescence depends greatly upon soil; the bearding of the petals is uncertain; the comparative length of the stalks is fallacious, being influenced by situation and earliness of flowering, so that the same violet growing in the water shall have a petiole twice as long as the leaf, while in drier ground it shall be shorter than the leaf; the scapes also being longer or shorter than the leaves, as they appear early or late. On these accounts much care is requisite in admitting, as distinct species, those which are not sufficiently constant, independently of accidental influences, to be entitled to a distinctive character.

found smooth and bearded. Both are somewhat fragrant, the *blanda* most distinctly so.—Meadows.—May.—Perennial

These two violets, with almost every intermediate form of the leaf, grow together abundantly in wet, open situations about this city. I am not without suspicion, that they are all descendants of one species.

* VIOLA ACUTA.

Acute Violet.

Acaulis; foliis ovatis, glabris, petalis acutis, albis; bracteis petala longitudine subæquantibus.

Stemless; leaves ovate, glabrous; petals acute, white; bractes nearly as long as the petals.

This is our smallest native violet, and after observing it for several years I am satisfied that its characters are sufficiently permanent to render it a distinct species. Among the other white violets it is noticeable by its even and always acute petals, and likewise well distinguished by its long linear bractes which greatly exceed those of any similar violet. Root creeping. Stipules linear subulate; sometimes a little ciliate-toothed. Leaves ovate, smooth, crenate, rather obtuse. Petioles mostly smooth, and shorter than the leaves, hardly winged, but in dry soils ciliate with reflexed hairs. Scapes four sided, supporting a pair of linear-lanceolate, foliaceous, incurved bractes, which are nearly as long as the petals. Calyx smooth, acute. Petals oval, remarkably even or flat, and acute, the odd one obovate, striate with purple at base, the lateral ones slightly striate, and rarely bearded. Stigma capitate, rostrate.—Grows in Cambridge, particularly about the pine trees on Craigie's road, in moderately damp soil.—May, June.—Perennial.

VIOLA PALMATA? Willd.

Palmated Violet.

Stemless; pubescent, leaves cordate, hastate-lobate or palmate, the divisions toothed; segments of the calyx lanceolate, smooth.

* Root denticulate. Petioles hairy. Leaves pubescent, veiny, with a long crenate, subacute middle lobe, and one or two lateral lobes, the base cordate. The first leaves are simply cordate. Stipules lanceolate, ciliate-serrate. Bractes linear, about

as long as the calyx. Flowers of a fine purple, the two lateral petals furnished with a glandular beard, and nearly resembling those of *V. cucullata*, from which this plant is possibly derived.—Uplands.—May, June.—Perennial.

VIOLA PEDATA. L.*Pedate Violet.*

Stemless ; leaves pedate, seven parted. *L.*

A large flowering species, very distinct from the other American violets. Root fleshy, furnishing the best example we possess of the premorse or abrupt form. Petioles furnished at the base with long, ciliate stipules. Leaves perfectly pedate, consisting of from five to nine segments, which are wedge-formed and lanceolate, and mostly toothed at the end, the middle one distinct, the lateral ones connected. Segments of the calyx very long and linear. Petals pale purple, white or yellowish at base, all of them beardless and without striæ. Stigma compressed, its apex obliquely truncate, perforated.—Woods and dry soils.—May, June.—Perennial.

VIOLA SAGITTATA. Ait.*Arrow leaved Violet.*

Stemless ; leaves mostly smooth, oblong, heart-arrow shaped, cut at the base, serrate, petals bearded.

Leaves in most plants smooth, oblong or ovate, obtuse or acute, bluntly serrate, the lower serratures large and divergent, giving the leaf a hastate appearance. Petals dark purple, white at base, strongly bearded. Flowers rather erect.—In low grounds near the colleges, Cambridge.—May, June.—Perennial.

VIOLA OVATA. Nutt.*Spade leaved Violet.*

Stemless ; leaves ovate, crenate, hairy ; petiole margined.

Syn. VIOLA PRIMULIFOLIA. Pursh.

This violet grows on dry hills and pastures, and is nearly related to the foregoing, from which it has probably descended under the influence of a dry soil. The leaves are hairy on both sides, ovate, sometimes cut at the base like *V. sagittata*. Flowers paler purple, and very numerous. The whole plant is highly mucilaginous.—Common in barren soils.—May.—Perennial.

VIOLA CUCULLATA. Ait. *Hood leaved Violet.*

Stemless ; leaves heart shaped, rolled in at base ; petioles not margined.

Syn. VIOLA STRIATA. ? Schweinitz.

The most common blue violet of our wet meadows and low grounds. The leaves are strongly heart shaped and crenate ; the petioles commonly much longer than the leaves. Both are sometimes hairy, and sometimes smooth. Scapes four angled. Flowers large, purple, the lateral petals bearded, the beard glandular or not so. I have not been able to satisfy myself of a permanent difference between this plant and *V. striata*.—May.—Perennial.

VIOLA ROTUNDIFOLIA. Mx. *Round leaved yellow Violet.*

Stemless ; leaves orbicular-cordate with the sinus closed, slightly toothed, smoothish ; petiole pubescent ; calyx obtuse.

A yellow violet of small size when in perfect flower in May, but becoming larger with coriaceous leaves and apetalous flowers in summer.—In old woods in the western parts of the state.—Perennial.

A cospecies or variety is found with longer leaves.

VIOLA DEBILIS. Mx. *Spreading Violet.*

Caulescent ; smooth, leaves reniform-cordate, somewhat acuminate, crenate ; peduncles twice as long as the leaves ; stipules ciliate-serrate.

Stems angular. Leaves heart shaped, crenate, nearly smooth. Stipules linear-lanceolate, with loose spreading teeth. Peduncles longer than the petioles with two linear bractes. Calyx leaves smooth, lanceolate, acute. Petals pale purple, the two lateral ones bearded inside. Stigma rostrate.—On the Concord turnpike in Cambridge.—June.

VIOLA CANADENSIS. L. *Canada Violet.*

Caulescent ; smooth ; leaves cordate, acuminate,

serrate ; peduncles as long as the leaves ; stipules short, entire.

A large species often more than a foot in height. Leaves heart shaped, the largest ones strongly acuminate, the lower ones acute or obtuse, in some plants all obtuse. Flowers particoloured, the two upper petals purple without, the lower petals pale.—In woods, Windsor and Woodstock, Vermont.—June.

VIOLA PUBESCENS. *Ait.*

Yellow Violet.

Stem erect, villous ; leaves heart-shaped, pubescent ; stipules oblong, serrulate at tip. *Ait. abr.*

Syn. VIOLA PENNSYLVANICA. Mich.

Stem simple, pubescent, somewhat triangular. Leaves alternate, broad heart shaped or deltoid, with a tapering base, pointed, crenate, hairy, longer than their petioles. Stipules large, unequally ovate, serrate. Peduncles axillary, solitary, hairy, furnished with two subulate bractes. Calyx smoothish. Petals yellow, streaked with dark purple, and slightly bearded inside.—On the Concord turnpike, Cambridge.—June.

102. CLAYTONIA.

CLAYTONIA VIRGINICA. L.

Linear Claytonia.

Leaves linear-lanceolate ; racemes solitary ; calyx acute ; petals obovate, retuse ; root tuberous.

A delicate spring flower chiefly found in old moist woods. Stem about six inches high with a pair of opposite linear leaves about half way up. Racemes bearing about a dozen flowers on slender pedicels an inch long. Calyx subacute. Corolla white veined with purple.—In Connecticut.—May.—Perennial.

CLAYTONIA SPATHULATA. ? Pursh. Broad leaved Claytonia.

Leaves spatulate ; raceme solitary ; calyx obtuse ; petals roundish, retuse ; root tuberous.

Specimens gathered by Mr. Boott on the Camel's Rump mountain in Vermont, agree tolerably well with the foregoing character. The root leaves are spatulate and obtuse ; those of the stem opposite, lance-oval, and subacute.

103. THESIUUM.

THESIUUM UMBELLATUM. L. *Umbelled Thesium.*

Flowers umbelled; leaves oblong. L.

Syn. THESIUUM CORYMBULOSUM. Mich.

COMANDRA UMBELLATA. Nuttall.

Stem round, slender, seldom exceeding a foot in height. Leaves oval-lanceolate, mostly entire, alternate, smooth. Branches near the top, few, alternate. Umbels of few flowers, terminal, with an involucre of about four leaflets. Flowers on short peduncles. Calyx five cleft, the tube green, segments white. Stamens inserted on the calyx. Seed one.—Dry woods.—June.

A tuft of pubescence connects the anthers with the segments of the calyx. According to Mr. Nuttall, the germ is three seeded and becomes afterwards one seeded by abortion. He considers the calyx as terminating in a glandular ring, the segments above being petals. These characters form his genus *Comandra*.

104. QUERIA.

QUERIA CANADENSIS. L. *Queria.*

Stem erect, dichotomous; leaves oval; stipules scariose.

Syn. ANRCHIA DICHOTOMA. Mx.

A very slender branching plant. Stem dividing by forks into numerous, filiform branches, the joints furnished with a pair of very small oval, subsessile leaves, and several minute membranous stipules. Flowers minute. Stamens variable from three to five.—Dry woods.—July, August.

DIGYNIA.

105. APOCYNUM.

APOCYNUM ANDROSEMIFOLIUM. *Dog's Bane.*

Bigelow, Medical Botany, Pl. xxxvi.

Glabrous; stem erect and branching; cymes lateral and terminal; corolla spreading.

This grows often to the height of five or six feet, though its common elevation is three or four. Its stalk is smooth, simple

below, branching repeatedly at top, red on the side exposed to the sun. Leaves opposite, smooth on both sides, paler beneath, ovate, acute, on short petioles. The flowers grow in nodding cymes from the ends of the branches and axils of the upper leaves, furnished with minute acute bractes. Calyx five cleft, acute, much shorter than the corolla. Corolla white tinged with red, monopetalous, campanulate, with five acute spreading segments. Stamens five, with very short filaments, and connivent, oblong, arrow-shaped anthers, cohering with the stigma about their middle. The nectary consists of five oblong, glandular bodies alternating with the stamens. Germs two, ovate, concealed by the anthers. Stigma thick, roundish, agglutinated to the anthers. The fruit is a pair of slender linear-lanceolate follicles, containing numerous imbricated seeds each crowned with a long pappus, and attached to a slender central receptacle.—Road sides and borders of woods.—June, July.—Perennial.

APOCYNUM CANNABINUM. *L.*

Indian Hemp.

Stem erect ; leaves oblong-ovate, pale and downy beneath ; segments of the corolla erect.

Different from the preceding in its narrower leaves, and smaller, straighter flowers. Stem erect, smooth, branching. Leaves opposite, on short petioles, oblong-ovate, acute, glabrous above, paler and downy underneath. Cymes terminal, the peduncles smooth or downy, and furnished with linear bractes. Calyx segments acute. Corolla small, greenish, its segments obtuse and erect. The fibres of the bark are strong, like hemp.—Woods and meadows.—July.—Perennial.

106. ASCLEPIAS.

ASCLEPIAS TUBEROSA.

Butterfly weed.

Bigelow, Medical Botany, Pl. xxvi.

Hairy ; leaves alternate, oblong lanceolate ; branches cymose.

The root of this plant is large, fleshy, branching, and often somewhat fusiform. It is only by comparison with the other species that it can be called tuberous. The stems are numerous, growing in bunches from the root. They are erect, ascending,

or procumbent, round, hairy, green or red. Leaves scattered, the lower ones pedunculated, the upper ones sessile. They are narrow, oblong, hairy, obtuse at base, waved on the edge, and in the old plants sometimes revolute. The stem usually divides at top into from two to four branches, which give off crowded umbels from their upper side. The involucre consists of numerous short subulate leaflets. Flowers numerous, erect, of a beautifully bright orange colour. Calyx much smaller than the corolla, five parted, the segments subulate, reflexed, and concealed by the corolla. Corolla five parted, reflexed, the segments oblong. The nectary or staminal crown is formed of five erect cucullate leaves or cups, with an oblique mouth, having a small incurved acute horn proceeding from the base of the cavity of each, and meeting at the centre of the flower. The mass of stamens is a tough, horny, somewhat pyramidal substance, separable into five anthers. Each of these is bordered by membranous, reflected edges, contiguous to those of the next, and terminated by a membranous, reflected summit. Internally they have two cells. The pollen forms ten distinct, yellowish, transparent bodies, of a flat and spatulate form, ending in curved filaments, which unite them by pairs to a minute dark tubercle at top. Each pair is suspended in the cells of two adjoining anthers, so that if a needle be inserted between the membranous edges of two anthers and forced out at top, it carries with it a pair of the pollen masses. Pistils two, completely concealed within the mass of anthers. Germs ovate, with erect styles. The fruit, as in other species, is an erect lanceolate follicle on a sigmoid peduncle. In this it is green with a reddish tinge and downy. Seeds ovate, flat, margined, connected to the receptacle by long silken hairs. Receptacle longitudinal, loose, chaffy.—Dry soil.—Woburn, Newton.—August.—Perennial.

ASCLEPIAS SYRIACA. L. Common Silk weed or Milk weed.

Stem simple ; leaves lance-oblong, gradually acute, downy underneath ; umbels somewhat nodding ; foli-oles muricate.

Very common by road sides and borders of fields. Stem three or four feet high, undivided. Leaves opposite, large, oblong. Umbels of flowers lateral and terminal, nodding. Calyx segments

lanceolate. Corolla green and red, reflexed quite back. Nectaries red, truncated obliquely inward, and cleft with an oblique ridge on each side the fissure, the horns moderately incurved. Mass of anthers cylindrical with black corpuscles at the top of the wings, each of which draws out a pair of yellow obovate pollen masses. Pods or follicles, oblong, acute, covered with soft spinous projections. They contain large quantities of a fine silken down attached to the seeds, for which the plant has been cultivated in Europe and America. It is used as a substitute for feathers, fur, cotton, &c.—July.—Perennial.

ASCLEPIAS OBTUSIFOLIA. Mich. *Blunt leaved Silk weed.*

Leaves closely sessile, oblong, obtuse, waved; umbel terminal, on a long peduncle; corollas smooth. *Mich. abr.*

Leaves opposite, ovate, heart shaped at base, sessile, apparently clasping, very much waved on the margin, obtuse at the end, mucronated. Stem erect, supporting a terminal umbel at a distance from the leaves. The flowers are larger than in any species here described. Calyx leaves ovate, acute, a quarter as long as the petals. Corolla spreading, afterwards reflexed, greenish white tinged with red. Nectaries paler, large, cylindrical, obliquely truncated inward, cleft inside, with acute incurved horns rising from their centres. Mass of anthers more cylindrical than in some other species, its summit discoid, umbilicate, with five rounded teeth. Pollen masses resembling those in *A. phytolaccoides*.—Cambridge, Sweet Auburn.—July.—Perennial.

ASCLEPIAS PHYTOLACCOIDES. Pursh. *Poke leaved Silk weed.*

Stem erect, simple; leaves ovate, acute; umbels lateral, on long stalks, nodding; nectaries truncated obliquely outward.

Syn. ASCLEPIAS EXALTATA. Muhl.

A tall, large flowering species, more delicate in its appearance than *A. Syriaca*. Stem erect, slender, smooth, four or five feet high. Leaves large, opposite, on short petioles, ovate-lanceolate, acute, smooth above, pale and slightly pubescent under-

neath. Umbels somewhat nodding on rather long peduncles, given off at the upper pairs of leaves. Involucre irregular, of short linear leaflets. Flowers large. Petals green. Nectaries white or flesh coloured, truncated obliquely outward, and toothed at the top inside, with long horns curving inward. Mass of anthers cylindrical, green with black dots, white on the summit. At the top of the wings of the anthers are five minute black corpuscles, which, being drawn out with a pin, bring with them pairs of yellow, narrow obovate pollen masses.—Low grounds.—June.—Perennial.

ASCLEPIAS PURPURASCENS. L. Dark flowered Silk weed.

Stem nearly simple ; leaves ovate, hairy beneath ; corymbs erect ; horns of the nectary resupinate.

This species is well defined by the peculiar curvature of the horn. Stem erect, smooth, with a barely perceptible down, slightly branched at top, three or four feet high. Leaves opposite, glabrous above, paler and downy beneath, the midrib purple above. Umbels terminal, on stout footstalks with flowers about the size of *A. Syriaca*. Calyx small, very acute. Corolla reflexed, acute, of a dark crimson purple, sometimes lighter if the plant grows in the sun. Nectaries of the same colour, truncated very obliquely inward, the horns bent inward at a right angle so close to the stigma that they appear at first view to be wanting. Mass of anthers greenish, variegated with brown, and about half as long as the nectaries.—In different soils, Cambridge, Newton, rare.—July.—Perennial.

ASCLEPIAS PULCHRA. Willd. Water Silk weed.

Leaves lanceolate, pubescent underneath ; stem divided toward the top ; umbels erect, in pairs.
Willd.

Common in wet ground, by the sides of ponds, &c. Stems commonly in bunches, erect, downy, subdivided near the top. Leaves lanceolate, tapering to a very acute point, sometimes hairy on both sides, as is also the stem. Umbels many, small, on downy peduncles. Involucre many leaved, deciduous. Flowers small, half the size of *A. Syriaca*. Corolla crimson-purple, acute. Nectaries paler, truncated obliquely inwards, almost to their

base ; horns erect incurved. Mass of anthers greenish, as long as the nectaries ; stigma whitish. Flowers purple.—July.—Perennial.

The bark is very strong and fibrous.

ASCLEPIAS QUADRIFOLIA.

Four leaved Asclepias.

Stem erect, simple, smooth ; leaves ovate, acuminate, petioled, the middle ones in fours ; umbels few, lax, filiform.

A delicate species growing in dry woods. Stem about a foot high, smooth or slightly pubescent. Leaves in fours, slightly petioled, ovate, acute, paler underneath. The upper and lower ones are most frequently opposite. Umbels few, axillary and terminal. Petals flesh coloured. Nectaries nearly white with the horns curved inward.—Roxbury, Brookline.—June.—Perennial.

ASCLEPIAS VERTICILLATA. L.

Whorled Asclepias.

Leaves revolute, linear, whorled ; stem erect. L.

This very neat species is altogether different in its habit from those already described. Stem slender, marked with downy stripes. Leaves in whorls of five or six, linear, revolute at the margin, paler beneath. Umbels several, small, coming out from among the upper whorls. Corolla greenish with a central transparent line. Nectaries white, scarcely half as long as their horns, auriculated at base inside, concavely truncate, with an acuminate tooth each side the fissure within. Horns arching and meeting at a distance from the stigma.—On a hill near the Dedham turnpike, Roxbury.—July.—Perennial.

§ *Subgenus ACERATES.* *Horn of the nectary wanting.*

ASCLEPIAS VIRIDIFLORA. Pursh. *Green flowered Asclepias.*

Stem simple, erect, hairy ; leaves oblong, subsessile, downy on both sides ; umbels lateral, solitary, subsessile, nodding, dense and globose ; horn wanting.

An inelegant species with small greenish umbels.—In Leicester, Massachusetts.—In New-Haven, Dr. Ives.—July.

107. GENTIANA.

GENTIANA SAPONARIA. *L.**Soapwort Gentian.*

Stem round ; leaves lanceolate-oval, three nerved ; flowers sessile, fascicled, axillary and terminal ; corollas ventricose, segments obtuse, inner folds toothed.

A very fine plant, distinguished by its large purple flowers, which are so nearly closed at the top as to resemble buds. Stem erect, simple, smooth. Leaves opposite, oval-lanceolate, acuminate, smooth, three and sometimes five nerved. Flowers sessile in bunches at the top, and frequently on the sides in the axils of the upper leaves. Corolla bell shaped, purple and white, slightly five cleft, its segments subdivided and folded together so as to close the mouth.—Found in moist woods, Cambridge.—September, October.—Flowers sometimes white or variegated.

GENTIANA PNEUMONANTHE. *L.**Marsh Gentian.*

Stem round ; leaves linear lanceolate, rather obtuse ; terminal flowers fascicled, lateral ones solitary ; corollas five cleft, campanulate ; segments rounded ; inner folds one toothed.

Allied to the foregoing, but much more slender in all its parts, besides the differences of character.—Swamps near Portland.—August.

♂ *Subgenus* CROSSOPETALA. *Corolla four cleft, hypocrateriform, throat naked.*

GENTIANA CRINITA. *Froel.**Fringed Gentian.*

Corollas four cleft, the segments cut-ciliate ; leaves lanceolate, acute ; stem erect, round. *Froel.*

This gentian is exceeded by few native plants in the delicacy and beauty of its flowers. The stems are divided toward the top into several erect branches. The leaves are opposite, ovate-lanceolate, smaller than in the first species. Flowers erect, on the ends of the branches, remote from the leaves. The stamens are four in number, as are the segments of the calyx and corolla. Calyx square with acute angles and segments. Segments of the corolla of a deep fine purple, fringed at the end, expanded in

the sun, erect and twisted at other times, contracted below, with four large internal glands at base. Germ lanceolate, stigmas two, thin, roundish ovate.—On the Concord turnpike.—September, October.

108. CUSCUTA.

CUSCUTA AMERICANA. *L.**Dodder.*

Flowers peduncled, umbellate, five cleft. *Willd.*

A small, yellowish, leafless vine, twining round other plants, which it penetrates with lateral roots so as to derive nourishment from their juices. Its small umbels of flowers appear in June and July, and are followed by crowded, roundish, depressed, mostly four seeded capsules, tuberculated under a magnifier, and having a terminal cavity.

109. HEUCHERA.

HEUCHERA AMERICANA. *L.**Alum Root.*

Viscid-pubescent; leaves rough, round-lobed and toothed; stalks of the panicle divaricate; calyx obtuse; petals as long as the calyx, lanceolate; stamens much exerted.

Syn. HEUCHERA CORPUSA. Mx.

Found in Connecticut, but not within my knowledge in Massachusetts.—June.

110. SALSOLA.

SALSOLA CAROLINIANA. *Mich.**American Saltwort.*

Herbaceous, decumbent; leaves subulate, spinous, smooth, dilated and entire at base; calyx axillary, margined.

A stiff, prickly plant of the sea shore. Stems much branched, angular, smooth. Leaves cylindrical while young, tipped with a spine, sessile. The lower leaves are deciduous, so that when the fruit is ripe, only the floral leaves remain. These are three in number to each flower, resembling the other leaves, but shorter, their base dilated and perfectly entire, not repand as in *Salsola Kali*. The calyx is externally compressed into a broad.

membranous margin, flattish, but rising in the centre. Seed enclosed in the calyx, cockle-shaped from its spiral cotyledons.—Salt marshes.—July, August.

Plants of this genus are used in the manufacture of Soda.

SALSOLA SALSA. *Mich.*

Smooth Salt Wort.

Herbaceous, decumbent, smooth; leaves linear, unarmed, fleshy; fructification crowded, somewhat spiked.

Stem somewhat erect with numerous spreading branches nearly smooth, furrowed. Leaves linear, fleshy, semicylindric, somewhat of a glaucous hue, not prickly. Flowers obscure, sessile, two or three together in the axil of each leaf. Calyx leaves obtuse, connivent. Stamens slightly projecting. Seed small, spiral.—Salt marshes.—August.—Annual.

111. CHENOPODIUM.

CHENOPODIUM ALBUM. *L.* *White Goosefoot. Hog-weed.*

Leaves rhomboid-ovate, eroded, entire behind, the upper ones oblong, entire; seeds smooth. *Sm.*

A common weed in cultivated and waste ground. Stem channelled, branched; leaves mealy, the lower ones unequally toothed above, the upper ones smaller, entire. Bunches of flowers erect, green or mealy.—July.—Annual.

CHENOPODIUM RUBRUM. *L.*

Red Goosefoot.

Leaves triangular, approaching to rhomboid; deeply toothed, and somewhat sinuated; clusters upright, compound, leafy. *Sm.*

More green, fleshy, and compact than the last. Leaves sinuated, tapering at base. Clusters of flowers, close, interspersed with small leaves.—Among rubbish, especially in low ground.—Annual.

CHENOPODIUM HYBRIDUM. *L.*

Tall Goosefoot.

Leaves cordate, angular-toothed, acuminate; racemes branched, somewhat cymose, divaricate, leafless. *Sm.*

A tall species with large leaves. Stem slender, upright. Leaves spreading, bright green, with a few large teeth on each side, heart shaped at base, tapering into a long point. Clusters compound, branching, open, remote from leaves.—Wastes and rubbish.—July.—Annual.

CHENOPODIUM BOTRYS. *L.* *Cut leaved Goosefoot.*

Leaves oblong, sinuated ; racemes naked, many cleft. *L.*

Stem short, branching, somewhat rigid, leafy. Leaves petioled, oblong, deeply sinuated, slightly pubescent. Flowers in numerous short axillary racemes, covering the ends of the branches, and giving them the appearance of long leafy spikes. The whole plant has a strong, peculiar smell when bruised.—Woods, Brighton.—Annual.

112. ULMUS.

ULMUS AMERICANA. *L.* *Common Elm.*

Leaves equally serrate, unequal at the base. *L.*

This stately tree is distinguished at sight from the cultivated English elms by its long pendulous branches. It also loses its leaves in autumn several weeks sooner. The flowers, which appear in April, have commonly from six to eight stamens. They are small, of a dull purple colour, and grow in bunches on slender footstalks. Germs orbicular, compressed. Styles two, recurved, hairy on both sides. The seeds are contained in a flat, oval, winged capsule or samara, which is ciliated at the edge. The leaves grow alternately on opposite sides of the branches ; they are more smooth and more uniformly serrated than those of the English elm. The wood of the elm is tough, and principally used to form the naves or hubbs of wheels.

ULMUS FULVA. *Mx.* *Slippery Elm.*

Branches rough ; leaves oblong-ovate, acuminate, nearly equal at base, unequally serrate, pubescent both sides, very rough ; buds covered with fulvous down ; flowers sessile.

The slippery elm is well known for the mucilaginous qualities

of its inner bark. It is found in different parts of Worcester county, but I have not met with it nearer Boston.

113. HYDROCOTYLE.

HYDROCOTYLE AMERICANA. *L.* Pennywort.

Leaves reniform, somewhat lobed, crenate. *L.*

A small plant found in moist ground under the shade of bushes, &c. Stem creeping. Leaves kidney shaped, doubly crenate, light green, very smooth and thin. Flowers minute, in very small umbels or bunches, sessile.—July.—Perennial.

HYDROCOTYLE UMBELLATA. *L.* Umbelled Hydrocotyle.

Leaves peltate, crenate, emarginate at base; umbels pedunculated, many flowered, flowers pedicelled.

An aquatic, larger and firmer than the preceding species. Leaves reniform and peltate, floating in deep water, or erect in shallow. Umbels found only in shallow water, or wet ground.—Fresh pond.—July.

114. SANICULA.

SANICULA MARILANDICA. *L.* Sanicle.

Barren flowers on peduncles, perfect ones sessile. *Gr.*

Stem upright, smooth, furrowed, divided into a few erect branches. Leaves divided somewhat in a pedate manner, acutely serrate, the upper ones generally ovate-lanceolate resembling heads, with an involucre of short ovate leaves. Umbels simple, few flowered, the barren flowers on short peduncles, the perfect or fruitful ones sessile. Seeds furnished with hooked bristles.—About thickets in low ground.—June.

115. DAUCUS.

DAUCUS CAROTA. *L.* Carrot.

Fruit hispid, petioles nerved underneath.

The common carrot, in its wild state, grows at Chelsea and elsewhere, and is known at sight when in fruit by the cohesion of the whole umbel, forming a concave surface. Involucre pinnatifid.—June, July.—Biennial.

116. HERACLEUM.

HERACLEUM LANATUM. *Mich.**Cow Parsnep.*

— Leaves ternate, woolly underneath, leaflets petioled roundish-heart shaped, lobed ; fruit orbicular. *Mich. abr.*

One of the largest of our umbelliferous plants. Petioles and nerves of the leaves channelled, bristly. Leaflets large, woolly on the under side, deeply cut into lobes, which are again cut, and unequally serrate. Umbels radiate, often a foot wide. Peduncles furrowed. Leaflets of the involucre lanceolate, tapering to a very long point, deciduous. Flowers white. Petals heart shaped with a very deep inflected sinus. Seeds thin, round-oval, emarginate, marked with three short lines.—South Boston, Dorchester.—June.—Perennial.

117. CONIUM.

CONIUM MACULATUM. *L.**Hemlock.*

Bigelow, Medical Botany, Pl. xi.

Fruit unarmed, with the ridges undulated.

A well known poisonous plant used as a narcotic in medical practice. Root biennial, somewhat fusiform and generally branched. Stalk round, very smooth, striated, hollow, jointed, and more or less marked with purplish spots. Leaves two or three times pinnate, of a very bright green, with long sheathing petioles inserted on the joints of the stem ; the leaflets pinnatifid and toothed. Flowers in terminal umbels, the general involucre with half a dozen lanceolate, reflected leaflets, the partial involucre with three or four situated on the outside. Flowers very small, white. Petals five, oval with their points inflexed. Stamens five, spreading, about the length of the corolla. Germ inferior. Styles two, reflexed outwardly. Fruit roundish-oval, compressed, ribbed, the ribs being transversely wrinkled or crenate, separating into two oblong hemispherical seeds.—In waste ground and road sides.—June.—Biennial.

118. ANGELICA.

ANGELICA TRIQUINATA. *Mich.**Common Angelica.*

Petiole three parted, its divisions pinnate-five leav-

ed ; leaflets cut-toothed, of the terminal leaflets the odd one rhomboid, sessile, the lateral ones decursive. *Mich.*

Syn. *ANGELICA ATROPURPUREA?* *N. Y. Cat.*

A very large umbellate plant, well known for its fine aromatic flavour. Stem five or six feet high and an inch or more in thickness, hollow, purplish, smooth throughout. Stipules large and swelling. Petioles roundish, slightly furrowed on the upper side. Leaves mostly twice ternate, smooth, pale and veiny beneath, the terminal leaflet sessile and sometimes three lobed, the highest lateral ones decurrent ; all of them sharply and irregularly serrate. Umbels three, terminal, spherical, without general involucre. Partial stalks angular, with subulate involucres, shorter than the pedicels. Petals green with a tinge of red on the outside. Seeds oblong-hemispherical, three winged on the back—Cambridge, meadows.—June.

The circumstance that the terminal leaflet is sessile, never petioled, is sufficient evidence this plant is not *A. atropurpurea* of Linnæus, as many of our botanists suppose.

119. LIGUSTICUM.

LIGUSTICUM SCOTICUM. *L.*

Sea Lovage.

Stem leaves twice ternate, the upper ones trifoliate ; umbels straight ; involucre and involucels linear, many leaved.

Stem purple or green, flexuous, striated, a foot or two high and larger than a goose quill. Petioles with large sheaths. Leaves twice ternate ; the leaflets sessile, and sometimes connected at base, oval or rhomboidal, smooth, shining, veiny, and somewhat fleshy. Umbels with general and partial involucres. Flowers white. Fruit oblong-oval, separating into seeds which have three strong ridges on the back.—On the borders of Charles river, Cambridge, and other parts of the edge of salt marshes.—August, September.—Perennial.

120. SIUM.

SIUM LATIFOLIUM. *L.*

Water Parsnep.

Leaves pinnate ; leaflets oblong-lanceolate, equally serrate. *Sm.*

A tall aquatic plant common in ditches and muddy brooks.

Stem erect, hollow, smooth, with deep furrows, and sharp, prominent angles. Leaves pinnate; leaflets in half a dozen pairs, with an odd one, ovate-lanceolate, equally serrate, or lacinated if under water. Umbels solitary, mostly terminal. General involucre of many leaves lanceolate, and occasionally serrate. Partial involucres small. Flowers white. Fruit ovate, striated.—From July to September.—Perennial.

121. URASPERMUM.

URASPERMUM CLAYTONI. Nutt. *Sweet Uraspermum.*

Stem smooth; leaves decomposed, leaflets cut-toothed; styles of the fruit filiform, divergent.

Syn. SCANDIX DULCIS. Muhl

MYRRHIS CLAYTONI. Mx.?

Root fleshy, fusiform or branching, with an agreeable sweet, spicy flavour, like that of Anise. Stem about two feet high, smooth when full grown, striated. Leaves ternate, the divisions pinnate or ternate, the lower ones on long, smooth petioles, the upper ones sessile. Stipules hairy at the edge. Leaflets ovate, toothed and cut, slightly pubescent, shining underneath. Umbels of a few long rays. General involucre of from two to four deciduous lanceolate leaves. Partial ones five leaved, shorter. Partial umbels few flowered, the central flowers abortive. Fruit stipitate, clavate, oblanceolate, blackish and tasteless, covered, especially on its lower part and stipe, with appressed, aculeate bristles. The styles which crown the fruit are filiform and deflected, not parallel as in the following species. The dry seeds are tasteless, and have a caudate appendage at base.—In rich woods, Oak island. Watertown.—June.—Perennial.

* URASPERMUM HIRSUTUM. *Hairy Uraspermum.*

U. hirsutum; foliis decompositis, foliolis pinnatifido-incisis; stylis fructus pyramidatis, approximatis.

Hairy; leaves decomposed, leaflets cut-pinnatifid; styles of the fruit pyramidal, approximate.

This plant differs from the preceding in the taste of its root, which is not sweet and anisate, but rank and unpleasant, somewhat like that of *Aralia nudicaulis*. Its more hairy aspect when

adult, and its more pinnatifid leaves, make it distinguishable at sight. Stem, stalks and veins, clothed with divergent hairs at all periods. Leaves resembling those of the foregoing species, but always more deeply cut, and covered with scattered hairs. General involucre of two or three leaflets, deciduous. Partial involucre of five oval acuminate leaflets. Barren flowers central; fertile ones four or five external. Fruit stipitate and bristly as in the last, but differing in the styles which are pyramidal or ovate, only half as long as in the last, and appressed so as to form one point, instead of diverging.—Woods on the Concord turnpike.—June.—Perennial.

The difference of this species was first pointed out to me by Dr. Martyn Paine, in specimens sent from Montreal.

122. PASTINACA.

PASTINACA SATIVA.

Parsnip.

Leaves simply pinnate, pubescent underneath.

The parsnip in its wild state is abundantly naturalized in waste grounds. The root is materially changed by difference of soil. It becomes strong, acrid and virose. Stem three or four feet high, smooth, angular. Umbels with yellow flowers and large flat fruit.—July.—Biennial

123. SMYRNIUM.

SMYRNIUM AUREUM.

Golden Alexanders.

Leaves twice ternate, leaflets ovate-lanceolate, serrate; rays of the umbel short.

Syn. THAPSIUM AUREUM. *Nutt.*

About two feet high. General involucre none, partial involucre of about three short lanceolate leaflets on one side. Flowers orange yellow, in umbels of moderate size. Fruit oval with membranous ridges.—At Walpole, New-Hampshire.—June.

124. ÆTHUSA.

ÆTHUSA CYNAPIUM. *L.**Fools Parsley.*

Leaves similar, bipinnate, leaflets pinnatifid.

This plant has at first sight considerable resemblance to *Conium maculatum*, although smaller, and has been often gathered

by mistake for that plant by druggists. Stem about two feet high, striated, not spotted. Leaves bipinnate and at length pinatifid. The distinguishing mark of this plant is in the partial involucre which consist of only three leaflets which are external, linear, long and pendulous.—Common about the streets of this city, probably introduced from Europe.—July, August.—Annual.

124. SISON.

SISON CANADENSE. *L.**Honewort.*

Leaves ternate ; umbels irregular.

Syn. *CHAEROPHYLLUM CANADENSE.* Pursh.

MYRRHIS CANADENSIS. Nutt.

Stem smooth. Leaves in threes, the radical ones cleft, those of the stem doubly toothed, rhomboidal, smooth or shining. Umbel branched, unequal, of few rays, with no general involucre. Partial umbels unequal, close, few flowered, with a minute involucre. Flowers small, white. Seeds smooth, oblong.—Chelsea beach island.—July.

125. CICUTA.

CICUTA MACULATA. *L.**American Hemlock.*

Bigelow, Medical Botany, Pl. xii.

Root fascicled, leaves oblong, with mucronate serratures.

The root is composed of a number of large, oblong, fleshy tubers, diverging from the base of the stem, and frequently being found of the size and length of the finger. The root is perennial, and has a strong, penetrating smell and taste. In various parts of the bark it contains distinct cells or cavities, which are filled with a yellowish resinous juice. The plant is from three to six feet high. Its stem is smooth, branched at top, hollow, jointed, striated, and commonly of a purple colour, except when the plant grows in the shade, in which case it is green. The leaves are compound, the largest being about three times pinnate, the uppermost only ternate. Most of the petioles are furnished with long obtuse stipules, which clasp the stem with their base. Leaflets oblong, acuminate, serrate, the serratures

very acute or mucronated. The veins end in the notches, and not at the points of the serratures. The flowers grow in umbels of a middling size, without a general involucre. The partial umbels are furnished with involucres of very short, narrow, acute leaflets. The distinctness or separation of these umbels characterizes this plant at a distance among other plants of its kind, whose umbels are more crowded. Calyx of five very minute segments. Petals five, white, obovate, with inflected points. Fruit nearly orbicular, compressed, ten furrowed, crowned at top, and separating into two semicircular seeds.—Common in wet meadows.—July, August.—Perennial.

This is probably the most dangerous of all our poisonous vegetables, and various instances of speedy death have taken place in children who have unwarily eaten the root. See a particular account in the American Medical Botany, volume 1.

CICUTA BULBIFERA. *L.*

Bulbiferous Cicuta.

Leaves decomposed, linear; branches bulbiferous.

Stem about three feet high, round, hollow, striated, green, with a slight glaucous powder. Leaves thrice compound; leaflets smooth, linear, with divergent teeth. Stipules membranous, gradually lost in the petiole. Branches numerous, covered with small oval, acuminate, scaly bulbs, invested by the dilated base of leaflets, resembling bracts. These bulbs are in whorls when young, but are afterwards scattered by the growth of the branchlets, which support them. Umbel small, terminal. General involucre none, partial of short, acuminate leaflets. Flowers white. Petals small, ovate, acuminate with the point inflexed. Fruit suborbicular, compressed, striate.—Ditches and ponds.—July, August.—Annual.

TRIGYNIA.

126. VIBURNUM.

VIBURNUM LENTAGO. *L.*

Sweet Viburnum.

Leaves broad-ovate, acuminate, sharply serrate, petioles margined, curled. *Ait.*

A tall shrub in low grounds. Leaves very finely serrate, the serratures sharp, a little turned inward. Petioles with a mem-

branous margin, widest in the upper leaves, waved or curled. Flowers in cymes, as are all the subsequent species. Fruit pleasant to the taste.—South Boston, Cambridge.—June.

VIBURNUM PYRIFOLIUM. ? *L.* *Pear leaved Viburnum.*

Smooth ; leaves oblong-oval, subacute, subserrate ; cymes subpedunculate.

Leaves opposite, oblong-oval extended into an obtuse point, smooth on both sides, coriaceous, slightly serrate or eroded. Petioles and peduncles covered with minute black glands. Cymes nearly sessile, furnished with linear deciduous bractes. Calyx segments short, acute. Segments of the corolla orbicular.—Sides of Monadnock mountain, New-Hampshire.—June.

VIBURNUM NUDUM. *L.* *Naked Viburnum.*

Glabrous ; leaves oval, revolute at the edge, nearly entire, petioles smooth ; cymes pedunculated.

Leaves smooth and coriaceous, oval, obtuse or acute, many of them acuminate, obsoletely crenate and slightly revolute. Cymes on peduncles an inch or two long and covered with minute dots. Bractes caducous.—Swamps, rare.—June.

The leaves have an evergreen and coriaceous appearance and turn black in drying.—Low woods, Cambridge, Weston.—June.

Variety β . *parvifolium.* Leaves not half the size of the foregoing, mostly acuminate.—At Sandwich. Mr. Greene.

VIBURNUM DENTATUM. *L.* *Arrow wood.*

Leaves ovate, dentate-serrate, plaited. *L.*

A more common shrub than the foregoing. The shoots are slender and very straight, from whence it has received the name of Arrow wood. Leaves roundish or oval, very regularly toothed, the veins parallel and prominent underneath.—Moist woods.—June, July.

VIBURNUM ACERIFOLIUM. *L.* *Maple Viburnum.*

Leaves three lobed, acuminate, sharply serrate ; petioles without glands, hairy ; cymes not radiate.

Leaves rounded or hearted at base, broad, divided into three

lobes with large teeth, very soft with minute down underneath. Cymes on long peduncles.—Dry woods, Roxbury.—June, July.

VIBURNUM LANTANOIDES. *Max.* *Hobble bush.*

Petioles and nerves pulverulent and downy ; leaves roundish-heart shaped, abruptly acuminate, unequally serrate ; cymes radiate, closely sessile ; fruit ovate.

Young leaves roundish and mealy in appearance, older leaves very large. Outer florets of the cyme very large, white, hypocrateriform and barren, the segments obovate ; inner florets small, bell shaped, fertile, the segments ovate. Berries large.—In old woods, Princeton, Jaffrey, New-Hampshire.—June.

VIBURNUM OXYCOCCOS. *Pursh.* *Tree Cranberry.*

Leaves three lobed, three nerved, lobes divaricate, acuminate, toothed ; petioles glandular ; cymes radiate.

Leaves paler underneath with large, unequal, bluntish teeth. Petioles smooth with about two glands in front at the base of the leaf. Outer florets barren, with large white hypocrateriform corollas. Fruit large, red, ripening late, and remaining after the leaves have fallen, intensely acid and somewhat bitter.—In Lancaster, New-Hampshire, and in Maine.—July.

The different species of *Viburnum* are fine flowering shrubs, and with the Elder, next described, constitute a principal ornament of our woods and thickets during the first part of summer.

127. SAMBUCUS.

SAMBUCUS CANADENSIS. *L.* *Common Elder.*

Cymes five parted ; leaves nearly bipinnate, stem shrubby. *Willd.*

Michaux says he could observe no difference between this species and the *Sambucus nigra* of Europe, except in size, the latter being a tree, the former a shrub. Leaves pinnate, the lower leaflets double or ternate, and all of them oblong-oval, sharply serrate, tapering to a very long and acute point. Flowers white ; berries blackish ; both considered medicinal.—June, July.

SAMBUCUS PUBESCENS. *Mx.**Panicled Elder.*

Bark verrucose ; pairs of leaflets two, oval-lanceolate, subpubescent underneath ; cymes panicled.

A smaller shrub than the preceding. Leaves pinnate. Leaflets five, lanceolate, sharply serrate and acuminate. Flowers white, in a panicle, with opposite, divaricated branches. Calyx teeth acute, spreading. Segments of the corolla oval, revolute. Stamens inserted on the corolla. Style very short, ending in three brownish stigmas.

Common in Vermont and the interior of New-England, though I have not seen it near the sea coast. It is hardly to be distinguished in the dried specimen, from *S. racemosa* of Europe.

128. RHUS.

RHUS GLABRUM. *L.**Smooth Sumach.*

Glabrous ; leaves pinnate, of many pairs, leaflets lance-oblong, serrate, whitish underneath, flowers diœcious.

A common species of Sumach found about fences and borders of fields. Petioles and leaves unarmed and smooth. The flowers are diœcious. Barren panicle much larger and spreading. Petals twice as long as the calyx, subacute, green. Stamens five, with oblong green anthers, and the rudiments of three styles. Fertile panicle more crowded ; corolla about as long as the calyx, green ; germ reddish with three styles. The leaves of this and the two following species are astringent and used in tanning. Berries crimson, astringent, and acid.—June, July.

RHUS TYPHINUM. *L.**Stag's Horn or Velvet Sumach.*

Branches and petioles hairy ; leaves pinnate, of many pairs, hairy underneath ; leaflets lance-oblong, sharply serrate ; flowers diœcious.

A larger species than the last ; its leafstalks and young branches covered with thick bristly hair. Bunches of berries crowded, purple, velvet like. This species is also diœcious.—In low ground.—June.

The bark and leaves give out a milky juice on being broken, both in this and the other species.

RHUS COPALLINUM. L. *Mountain or Dwarf Sumach.*

Leaves pinnate, entire; petioles membranous, jointed; flowers diœcious.

A smaller shrub than the preceding. The young branches and petioles are downy. Leaflets oval-lanceolate, acute, entire. Between each pair the petiole spreads out into a broad leafy expansion, contracted at the insertion of the leaflets. Flowers diœcious.

RHUS VERNIX. L. *Poison Sumach or Dogwood.*

Bigelow, Medical Botany, Pl. x.

Leaves annual, pinnate, glabrous; leaflets oblong, entire, acuminate; panicle lax, flowers diœcious.

This species grows in swamps, where its fine smooth leaves give it the air of a tropical shrub or tree. The trunk is from one to five inches in diameter, branching at top, and covered with a pale greyish bark. The wood is light and brittle, and contains much pith. The ends of the young shoots and the petioles are usually of a fine red colour, which contributes much to the beauty of the shrub. The leaves are pinnate, the leaflets oblong or oval, entire, or sometimes slightly sinuate, acuminate, smooth, paler underneath, nearly sessile, except the terminal one. The flowers, which appear in June, are very small, green, in loose axillary panicles. Where they appear not axillary, it is because the leaf under them has been detached. The barren and fertile flowers grow on different trees. The panicles of barren flowers are the largest and most branched. They are furnished with short, oblong bractes, and downy pedicels. The calyx has five ovate segments, and the corolla five oblong, sigmoid petals. The stamens are longer than the petals, and project through their interstices. The rudiment of a three-cleft style is found in the centre. In the fertile flowers the calyx and petals resemble the last, while the centre is occupied by an oval germ, ending in three circular stigmas. The fruit is a bunch of dry berries, or rather drupes of a greenish white, sometimes marked with slight purple veins, and becoming wrinkled when old. They are roundish, a little broadest at the upper end, and compressed, containing one white, hard, furrowed seed.

The effluvium of this shrub is a violent poison to certain constitutions, producing in them a distressing cutaneous eruption, when it is handled or even approached. On others, and I believe on a majority, it exerts no influence. The leaves have been rubbed, chewed, and swallowed without injury. Their taste is simply herbaceous and astringent, and does not indicate any extraordinary quality.

In Japan a fine varnish is said to be prepared from the juice of the *Rhus vernix*, a tree, whose identity with the present is still a subject of dispute.

RHUS RADICANS.

Poison Ivy.

Bigelow, Medical Botany, Pl. xlii.

Leaves ternate; leaflets petioled, ovate, naked, entire; stem rooting; flowers diœcious.

A hardy climber, frequently seen running up trees to a great height, supporting itself by lateral roots, and becoming nearly buried in their bark. The leaves of the *Rhus radicans* are ternate, and grow on long semicylindrical petioles. Leaflets ovate or rhomboidal, acute, smooth and shining on both sides, the veins sometimes a little hairy beneath. The margin is sometimes entire and sometimes variously toothed and lobed, in the same plant. The flowers are small and greenish white. They grow in panicles or compound racemes on the sides of the new shoots, and are chiefly axillary. The barren flowers have a calyx of five erect, acute segments, and a corolla of five oblong recurved petals. Stamens erect with oblong anthers. In the centre is a rudiment of a style. The fertile flowers, situated on a different plant, are about half the size of the preceding. The calyx and corolla are similar, but more erect. They have five small, abortive stamens and a roundish germ, surmounted with a short, erect style, ending in three stigmas. The berries are roundish, and of a pale green colour, approaching to white.

This species, like the last, is poisonous to many persons. The juice stains linen a black colour. Common about the borders of fields, &c.—June.

129. STAPHYLEA.

STAPHYLEA TRIFOLIA. *L.**Bladder tree.*

Leaves trifoliate, racemes pendulous; petals ciliate below; fruit ovate.

A handsome shrub from six to ten feet high, remarkable for its large inflated capsules. Leaves ternate, somewhat hairy; leaflets oval, serrate, acuminate, paler underneath. Flowers in a short, nodding panicle or raceme. Bractes minute, lanceolate, scarious. Calyx five parted, erect, tinged with red, its segments oblong, obtuse; its base contracted into a stalk which forms a joint with the peduncle. Petals white, obovate, obtuse, concave. Stamens erect, with downy filaments. Germ oval, triangular. Styles three, cohering into one. Capsule large, inflated, ovate, triangular, three parted at top, supporting the three styles, three celled; seeds obovate, fixed to the central receptacle.—In woods at Weston; also in the western parts of the state.—May, June.

130. SAROTHTA.

SAROTHTA GENTIANOIDES. *L.**Pine weed.**Syn. HYPERICUM SAROTHTA. Mich.*

A small, erect, branching plant. Leaves appressed, scale-like, so small, that the plant appears leafless. Branches numerous, subdivided, erect. Flowers small, yellow, with from five to ten stamens and three styles. Capsule oblong, coloured.—On sandy soils exposed to the sun.—July, August.

TETRAGYNIA.

130. PARNASSIA.

PARNASSIA CAROLINIANA. *M. & C.**Grass of Parnassus.*

Radical leaves suborbiculate, nectaries of three bristles. *Mx.*

Radical leaves roundish-ovate, entire, smooth, veined, tapering at base. Scape a foot high, smooth, with five sharp angles, furnished about its middle with one ovate, half clasping leaf. Calyx leaves oblong, obtuse, nerved, brown at the tips. Petals ovate, much longer than the calyx, white, with ten or twelve green nerves, reticulated on the sides at base. Nectaries five, alter-

nating with the stamens, each consisting of three equal, filamentary branches, ending in yellow, glandular heads. Anthers oblong. Germ ovate ; style none, stigmas four, sometimes five, at first indistinct, but afterwards prominent and recurved. Capsule ovate, one celled, four or five valved ; receptacles lateral, affixed to the valves. Seeds numerous, ovate. After the anthers have fallen, the nectaries are easily mistaken for stamens by the inexperienced.—Wet meadows, Rhode-Island and Connecticut.—August.—Perennial.

PENTAGYNIA.

132. ARALIA.

ARALIA NUDICAULIS. *L.* *Wild Sarsaparilla.*

Stemless, leaves decomposed, scape leafless. *Willd.*

A well known aromatic root. It has no stem unless the termination of the root be so considered. Leaves on long stalks, generally subdivided into three times three, or three times five leaflets, which are oblong-ovate, finely serrate, acuminate, veined and slightly hispid. The scape rises between the leaf stalks, and supports a few simple umbels of greenish flowers. Involucre scarcely any. Calyx with five very short, acute teeth. Petals five, green, with a central nerve, acute, reflexed. Stamens five, whitish, erect. Styles five, much shorter, acute, incurved.—Woods and thickets.—May, June.—Perennial.

ARALIA RACEMOSA. *L.* *Pettymorrel. Spikenard.*

Stem herbaceous, smooth ; leaves decomposed ; peduncles axillary, branching, umbelled. *Willd.*

Tall and irregularly branched. Stem smooth, dark green or red. Leaflets large, ovate or heart-shaped, serrate. Flowers in small umbels, which are again arranged in branching racemes, from the axils or forks of the stem.—In woods.—June, July.

It is aromatic and in high estimation with people of the country.

ARALIA HISPIDA. *Mich.* *Bristly Aralia.*

Stem shrubby at base, hispid ; leaves twice pinnate ; leaflets cut serrate ; umbels on long peduncles.

The lower part of the stem endures the winter, and has a shrubby appearance, but most of the herb is annual. The stem is set with thick and stiff bristles at the base. Leaflets much smaller than in the preceding, sharply and unequally serrate, ending in a long point. Umbels several, on long peduncles. Calyx teeth very short, subacute. Corolla greenish white with a prominent rib on the upper side of each petal. Stamens as long as the petals. Styles erect in the flower, but recurved and tipped with black in the fruit.—Woods, Cambridgeport.—June.

133. LINUM.

LINUM VIRGINIANUM.

Virginian Flax.

Calyx leaves acute; panicle terminal; flowers alternate, remote; leaves scattered, linear-lanceolate, the radical ones ovate.

Stem ascending, smooth, very slender, about a foot long. Leaves scattered, sessile, lanceolate, the lower ones obovate, smooth. Flowers small, in a dichotomous panicle; segments of the calyx unequal, acuminate. Petals obovate, yellow. Capsules spherical.—Woods.—July.—Perennial.

134. DROSERA.

DROSERA ROTUNDIFOLIA. L.

Round leaved Sun-dew.

Leaves orbicular, radical, depressed; petioles hairy; scape bearing a simple raceme. *Sm.*

The thick glandular hairs, which cover the leaves of this and other species, will readily distinguish them from other plants. Leaves small, round, spreading on the ground in a flat circle. Scape smooth, bearing a one-rowed, curved raceme of small white flowers.—Wet, boggy land.—July, August.

DROSERA LONGIFOLIA. L.

Long leaved Sun-dew.

Leaves spatulate-obovate, radical; petioles naked; scape bearing a simple raceme.

More slender than the last species. It has sometimes creeping roots which throw out a succession of leaves, and appear, when gathered, like leafy stems. Swamp, Charlestown, near Craigie's road.—July.

DROSERÀ TENUIFOLIA. *Muhl.*

Linear Sun-dew.

Leaves filiform, scape radical, raceme mostly simple, styles about six.

Syn. DROSERÀ FILIFORMIS.? Ph. Nutt.

Leaves rolled inward when young, long and linear or filiform, smooth and deeply channelled on the back, covered with glandular hairs in front and sides. Scape erect, smooth, round, mostly simple. Raceme unilateral, recurved, mostly simple. Flowers on short pedicels, erect, large. Calyx oval, hairy, its segments subacute. Petals five, purple, obovate, denticulate. Stamens ten; anthers oblong, yellow, crowded. Styles six, whitish, declined from the germ so as to stand without the stamens, which they exceed in length.

Borders of ponds, abundant, Plymouth, Massachusetts, where it was found by Judge Davis, twenty years ago, and lodged in Professor Peck's herbarium.

It will be seen that the foregoing description disagrees, in several respects, with that of Mr. Nuttall under *D. filiformis*. I am inclined, however, to believe them varieties of the same species.

135. STATICE.

SATICE CAROLINIANA.

Marsh Rosemary.

Bigelow, Medical Botany, Pl. xxv.

Scape round and panicled; leaves obovate-lanceolate, smooth, obtuse, mucronated, and flat on the margin.

A purple flowering plant of the salt marshes, very conspicuous about midsummer. The root of this plant is perennial, large, fleshy, fusiform or branched. Several tufts of the leaves and scapes are often produced from the same root. The leaves are narrow-obovate, supported by long petioles, smooth, veinless, obtuse, mucronated by the prolongation of the middle rib, level and flat on the margin, in which respect they differ from *S. limonium*, which is undulated. Scape round, a foot high, smooth, furnished with a few scales, flexuous at top, giving off numerous branches, which end in spikes of flowers; the whole forming a large panicle. The base of each branch and flower

is supported by an ovate, mucronated scale. The flowers are alternate, erect, consequently one sided in the horizontal branches; mostly in pairs, but appearing single from one expanding before the other. They grow on a short forked peduncle, which is concealed by several sheathing scales, part of which are common to the two, and part peculiar to the upper one. The calyx is funnel shaped, five angled, the angles ciliate and ending in long acute teeth with sometimes, not always, minute intermediate teeth. The upper part of the calyx is scarious and of a pink colour. Petals spatulate, obtuse, longer than the calyx, pale bluish purple. Stamens inserted in the claws of the petals, anthers heart shaped. Germ small, obovate, with five ascending styles shorter than the stamens. Seed oblong, invested with the persistent calyx.—Perennial.

The root is strongly astringent, and with us is an officinal article of considerable consumption.



Class VI. HEXANDRIA. Six stamens.

Order I. *MONOGYNIA.* One style.

136. LEONTICE. Calyx inferior, six leaved; petals six, opposite to the calyx; capsule berry-like, mostly inflated, one celled.

137. BERBERIS. Calyx six leaved, inferior; corolla six petalled; two glands at the base of each petal; berry two seeded.

138. PRINOS. Calyx six cleft, inferior; corolla six parted; wheel shaped; berry six seeded.

139. ALLIUM. Spathe many flowered; corolla inferior, six parted, spreading; umbel crowded; fruit capsular.

140. PONTEDERIA. Corolla inferior, ringent, six

cleft ; stamens inserted three in the tip, and three in the tube of the corolla ; capsule three celled.

141. *HYPOXIS*. Spathe two valved ; corolla superior, six parted ; capsule narrower at the base.

142. *ALETIS*. Calyx none ; corolla half superior, tubular, six cleft, wrinkled, persistent ; stamens inserted in the top of the tube ; style triangular ; capsule opening at top, three celled, many seeded.

143. *STREPTOPUS*. Calyx none ; corolla inferior, six petalled, subcampanulate ; berry roundish, three celled ; seeds few, hilum naked.

144. *CONVALLARIA*. Calyx none ; corolla six cleft, inferior ; stigma three sided ; berry three celled.

145. *UVULARIA*. Calyx none ; corolla inferior, petals six, erect, with a nectariferous cavity at their base ; stamens very short.

146. *DRACÆNA*. Calyx none ; corolla inferior, six petalled ; filaments a little thickened in the middle, berry two or three celled.

147. *ERYTHRONIUM*. Calyx none ; corolla inferior, six petalled ; the three inner petals with a callos prominence on each edge near the base.

148. *LILIUM*. Calyx none ; corolla inferior, six petalled, the petals with a longitudinal groove from the middle to the base.

149. *ACORUS*. Spadix cylindrical, covered with flowers ; corolla six petalled ; style none ; capsule three celled.

150. *JUNCUS*. Calyx six leaved, inferior, permanent ; corolla none ; capsule three valved ; stigmas three.

Order III. *TRIGYNIA*. Three styles.

151. *HELONIAS*. Corolla six parted, spreading, the segments without glands; capsule three celled, three horned, cells few seeded.

152. *MEDEOLA*. Calyx none; corolla inferior six parted, revolute; berry three celled.

153. *TRILLIUM*. Calyx three leaved, inferior; corolla three petalled; berry three celled.

154. *TRIGLOCHIN*. Calyx three leaved, inferior; corolla three leaved, resembling the calyx; styles none; capsule bursting at the base; seeds solitary.

155. *RUMEX*. Calyx three leaved inferior; petals three connivent; stigma many cleft; seed one, triangular, naked.

Order V. *POLYGYNIA*. Many styles.

156. *ALISMA*. Calyx three leaved; corolla three petalled; capsules numerous, clustered, one seeded.



HEXANDRIA.

MONOGYNIA.136. *LEONTICE*.

§ *Subgenus CAULOPHYLLUM*. Fruit scarcely inflated, opening when ripe.

LEONTICE THALICTROIDES. *Mx.*

Poppoose root.

Glabrous; leaves supradecomposed; leaflets oval, the lower ones petioled and lobed, the terminal one three lobed.

Syn. CAULOPHYLLUM THALICTROIDES. *Mx.*

A smooth plant with leaves resembling a *Thalictrum*, but many times larger. Flowers in a small racemose panicle at the division of the leaf stalks. Fruit stipitate, dark blue. According to Mr. Nuttall the germ is two seeded, and the fruit becomes one seeded by abortion; so that it appears hardly necessary to separate *Caulophyllum* from *Leontice*.*—Woods, Deerfield; Woodstock, Vermont.—May.—Perennial.

137. BERBERIS.

BERBERIS VULGARIS. *L.*

Barberry bush.

Flowers in racemes; spines three forked; serratures of leaves terminated by soft bristles. *Sm.*

Few shrubs are better known or more common by road sides and fences, in gravelly soils. Branches dotted and armed with triple thorns. Leaves inversely ovate, serrate, the teeth and point ending in short bristles. The yellow flowers appear in June in hanging clusters; succeeded by oblong, acid berries of a deep red colour.—This plant agrees almost precisely with the European.

A very remarkable degree of irritability, not exceeded by the sensitive plant, exists in the flowers of the Barberry. When these are fully expanded, the stamens are found spread out on the inner side of the corolla. In this situation, if the inside of the filament be touched with a pin or straw, it instantly contracts and throws the anther violently against the stigma. This fact, which has been particularly described by Dr. Smith in the English Barberry, is not less remarkable and distinct in the American variety of the shrub.

It is a commonly received opinion, both here and in Europe, that the barberry is injurious to cultivated grain. Wheat, rye, &c. growing in its neighbourhood, are said to be blighted. But some distinguished philosophic agriculturalists, among whom are Duhamel and Broussonet, have assured us that the opinion is without foundation.—May not the supposed fault belong to the peculiar soil and situation which the barberry frequents?

* See also *Decandolle Reg. veg.* ii. 24.

138. PRINOS.

PRINOS VERTICILLATUS.

Black Alder.

Bigelow, Medical Botany, Pl. lvi.

Leaves deciduous, oval, serrate, acuminate, slightly pubescent beneath ; flowers axillary, aggregate.

This shrub is irregular in its growth, but most commonly forms branches six or eight feet in height. Leaves alternate or scattered, on short petioles, oval or obovate, acute at base, sharply serrate, acuminate, with some hairiness, particularly on the veins underneath. Flowers small, white, growing in little tufts or imperfect umbels, which are nearly sessile in the axils of the leaves. Calyx small, six cleft, persistent. Corolla monopetalous, spreading, without a tube, the border divided into six obtuse segments. Stamens erect, with oblong anthers. In the barren flowers they are equal in length to the corolla, in the fertile ones shorter. Germ in the fertile flowers large, green, roundish, with a short neck or style, terminating in an obtuse stigma. Berries of a bright scarlet, in irregular bunches, roundish, supported by the persistent calyx, crowned with the stigma, six celled, containing six long seeds, which are convex outwardly, and sharp edged within. These berries are bitter and unpleasant to the taste, with a little sweetness and some acrimony.—Swamps.—July.

PRINOS AMBIGUUS. *Mr.**Long leaved Black Alder.*

Leaves deciduous, oval, acute at both ends, barren flowers crowded, fertile ones solitary.

Leaves more oblong, and less sharply serrate than in the last. Flowers often four or five cleft.—Roxbury.—June.

PRINOS GLABER. *L.**Evergreen Winter berry.*

Leaves wedge-lanceolate, glabrous, serrate at tip.

Distinguished from the former by its smooth coriaceous, evergreen leaves, which are of a bluntish lanceolate form, with a few small remote teeth at the end. Flowers axillary.—Swamps.—June, July.

159. ALLIUM.

ALLIUM CANADENSE. *L.* *Canada Garlic.*

Scape naked, round ; leaves linear ; head bearing bulbs.

Leaves radical, smooth, channelled above. Scape smooth, round. Spathe ovate, acute. The scape supports a head of bulbs with a short leaf under each, and a few pedunculated whitish flowers.—Woods, Chelsea beach island.—June.—Perennial.

ALLIUM TRICOCCON. *Willd.* *Lanceolate Garlic.*

Scape naked, half round ; leaves oblong-lanceolate, flat, smooth ; umbel globose ; seeds solitary.

This garlic with broad lanceolate leaves I have met with in the woods at Berwick, Maine.—July.—Perennial.

140. PONTEDERIA.

PONTEDERIA CORDATA. *L.* *Pickrel-weed.*

Leaves heart shaped, flowers spiked. *L.*

During the month of July, the tall blue spikes of Pontederia are very conspicuous on the borders of ponds and rivers of deep water and muddy bottoms. Stem erect, fleshy, cylindrical. Leaves long, heart shaped, very smooth, with convergent nerves. Stem leaf sheathing at the base of its stalk. Flowers in a cylindrical spike, proceeding from a short spathe. Corollas blue, irregular, the tube curved, pubescent, channelled, green at base, the border in six divisions, the three uppermost united, with commonly, not always, a yellow spot in the middle. The flowers roll themselves up when old. Capsule oblong, curved, with six acute, unequal, toothed angles. Seed one, oblong, acuminate.—Perennial.

141. HYPOXIS.

HYPOXIS ERECTA. *L.* *Yellow Bethlehem Star.*

Hairy ; scape about four flowered, shorter than the leaves ; leaves linear-lanceolate ; peduncles twice as long as the flower.

Syn. HYPOXIS CAROLINIANA. Mich.

The yellow, star-like flowers of this plant appear among the grass in pastures, in June and after. Root bulbous. Leaves grass like, hairy. Scape slender, hairy, divided at top into about four peduncles, with subulate bractes or spathes at their base. Corolla wheel shaped, of six lanceolate petals or segments, hairy on the outside.—Perennial.

142. ALETRIS.

ALETRIS FARINOSA.

Star Grass.

Bigelow, Medical Botany, Pl. 1.

Flowers pedicelled, oblong-tubular, somewhat wrinkled in fruit; leaves broad lanceolate.

This plant has a single circle of radical leaves, sessile, nerved, lanceolate, smooth. Stem or scape, from one to three feet high, invested with remote scales, which sometimes expand into small leaves. The flowers form a slender, scattered spike with very short pedicels and minute bractes. Calyx none. Corolla white, oblong bell shaped, divided at the mouth into six acute, spreading segments. The outside, particularly as the flower grows old, has a roughish, wrinkled or mealy appearance, by which the specific name was suggested. Stamens short, inserted near the mouth of the corolla at the base of the segments. The circumstance of their being opposite to the segments, and not alternate with them, affords a distinguishing mark of this genus. Anthers somewhat heart shaped. Germ pyramidal, half inferior, tapering: style triangular, separable into three. Capsule invested with the permanent corolla, triangular, three celled, three valved, at top. Seeds numerous, minute, fixed to a central receptacle.—The root is intensely bitter.—In low grounds, Bridgewater.—July.—Perennial.

143. STREPTOPUS.

STREPTOPUS DISTORTUS. *Mx.*

Curling Streptopus.

Smooth, leaves clasping; pedicels solitary, geniculate and contorted in the middle.

Syn. UVULARIA AMPLEXIFOLIA. Willd.

Whole plant glabrous. Stem round, branching. Leaves clasping.

ing, to appearance perfoliate, oblong acuminate, glaucous underneath. Peduncles opposite the leaves, turning downwards, filiform, contorted. Flowers bell shaped, greenish white, the petals reflexed, gibbous at base, where the stamens are inserted. Fruit scarlet, oblong, many seeded.—Woods, in the western parts of Massachusetts.—June.—Perennial.

STREPTOPUS ROSEUS. *Mr.* *Red flowering Streptopus.*

Smooth, leaves clasping, serrulate-ciliate, anthers short, two horned.

The species a good deal resembles the last, but the leaves appear ciliate, and when viewed with a magnifier are found to be edged with short cartilaginous filaments. Flowers reddish.—In Vermont and New-Hampshire.—June.—Perennial.

144. CONVALLARIA.

§ *Subgenus SMILACINA.* *Corolla four or six parted, spreading; flowers terminal.*

CONVALLARIA BIFOLIA. *L.* *Two leaved Solomon's Seal.*

Stem two or three leaved, leaves heart shaped, flowers tetrandrous. *Mich.*

Syn. SMILACINA CANADENSIS. Pursh.

The creeping roots of this little plant cause it to spread extensively in the moist situations where it grows. Its stem is angular and furnished with two or three smooth, thin, delicate leaves, oblong heart shaped and sessile, the lower one sometimes pedunculated. Flowers white, in a short erect cluster. Corolla four cleft; stamens four. Germ round, depressed, style straight, stigma bifid. The unripe berries are white and spotted, a circumstance said to be common to all the species.—Flowers in May.—Perennial.

CONVALLARIA TRIFOLIA. *L.* *Three leaved Solomon's Seal.*

Stem pubescent with three alternate leaves; leaves oblong-lanceolate; raceme terminal, lax.

Syn. SMILACINA TRIFOLIA. Pursh.

Stem round. Leaves alternate, lanceolate, clasping. Spike terminal, erect, simple. Peduncles short with minute concave

bractes. Corolla rotate with six lanceolate reflexed petals. Stamens six, straight, spreading. Germ triangular-ovate; style straight, stigma triple.—Near the Monadnock mountain, Mr. Nuttall.—May.—Perennial.

CONVALLARIA STELLATA.

Stem clothed with alternate, clasping, lanceolate leaves; raceme simple, terminal, few flowered.

Syn. SMILACINA STELLATA. Pursh.

About a foot high. Stem round, smooth, flexuous. Leaves alternate, two ranked, oblong or lanceolate, clasping, smooth above, glaucous or downy underneath. Raceme terminal, erect, simple, consisting of a few white flowers with six oblong petals and six stamens.—Low grounds, South Boston.—June.

CONVALLARIA RACEMOSA. *L. Clustered Solomon's Seal.*

Leaves alternate, nearly sessile, oval, acuminate; raceme terminal, compound.

A large species, every part of it covered with fine down. Root fleshy, sweet and mucilaginous. Leaves alternate, oblong, large, nerved, smooth in appearance, tapering to a long point, their base narrowed into a sort of petiole. The stem terminates in a compound raceme of white flowers on peduncles generally of the same colour. Corolla rotate, of six small linear divisions. Stamens longer than the petals, with conical filaments. Germ round. Style straight, short.—In low ground.—June.—Perennial.

§§ *Subgenus POLYGONATUM. Flowers cylindrical.*

CONVALLARIA MULTIFLORA. *L. Many flowered Solomon's Seal.*

Leaves alternate, clasping; stem round; peduncles axillary, many flowered. *L.*

Syn. POLYGONATUM MULTIFLORUM. Pursh.

A smaller plant than the preceding species. Stem about two feet high, smooth, round, simple, nodding at top. Leaves alternate, oval, nerved, pale and pubescent underneath, slightly clasping at base. Flower stalks axillary, drooping, branched, supporting several pendulous green flowers. Corollas long, funnel shaped, somewhat cylindrical, six cleft. Anthers oblong, acute,

filaments growing to the corolla ; style as long as the stamens.—About fences and shady places.—May, June.—Perennial.

CONVULLARIA CANALICULATA. *Channelled Solomon's Seal.*

Stem channelled, leaves alternate, clasping, oblong, pubescent at the edge, peduncles axillary, two flowered.

Syn. POLYGONATUM CANALICULATUM. *Pursh.*

Resembles the last, but is distinguished by its angular stalk. Resembles greatly *C. polygonatum* of Europe, and is by some considered identical.—Woods.—June.—Perennial.

145. UVULARIA.

UVULARIA PERFOLIATA. *L.* *Perfoliate Bellwort.*

Leaves perfoliate ; segments of the corolla granular within, capsule truncated. *Mich.*

Has the habit of the last genus. Stem smooth, round, running through the leaves. Leaves oval, smooth, perforated by the stem near their base, furnishing a good example of the perfoliate leaf, the sides reflexed when young. Branches axillary. Flowers pendulous, pale yellow, of six petals, their inside covered with small tubercles, dilated toward the bottom and terminating in a hollow nectary. Filaments short, fleshy ; anthers twice as long, terminating in a slender point. Germ obovate ; style longer than the stamens and separating into three diverging stigmas, bell shaped. Capsule three cornered, appearing as if cut off in the middle.—Woods, Watertown, Brookline.—May.—Perennial.

UVULARIA GRANDIFLORA. *Sm.* *Large flowered Bellwort.*

Leaves perfoliate, oblong, acute ; petals smooth inside ; anthers obtuse ; nectaries roundish.

Similar to the foregoing, but larger, the leaves narrower, the flowers brighter yellow and smooth inside.—Woods, Vermont.—May.—Perennial.

UVULARIA SESSILIFOLIA. L. *Sessile leaved Bellwort.*

Leaves sessile, lance-oval, glaucous underneath ; capsule pedunculated ; ovate. *Pers.*

Stem slender, smooth, dividing at top into two branches, one bearing only leaves, the other leaves and a flower. The leaves are alternate, thin, smooth, paler underneath. The flower pale yellow or greenish, on a slender axillary peduncle. Petals oblong-linear with an obscure tooth on each side at base. Anthers longer than the filaments. Germ oval, triangular, pedicelled. Style longer than stamens, dividing into three stigmas. Capsule ovate, contracted at base.—Woods, Brookline.—May.—Perennial.

146. DRACÆNA.

DRACÆNA BOREALIS. L. *Northern Dracæna.*

Leaves oblanceolate ; scape umbelled ; berries two celled.

Leaves radical or nearly so, a foot long, oblanceolate, smooth and shining, ciliate with fine loose hairs. Scape round, supporting a terminal umbel of a few handsome green bell shaped flowers. Petals six, lanceolate, spreading, gibbous at base. Stamens erect, anthers oblong. Style erect. Stigma semilunar, compressed. Germ superior, oval. Fruit an oblong berry, two celled, few seeded, and of a deep amethystine blue.

This plant has been improperly associated by Desfontaines with his genus *Smilacina*, from which it differs in its campanulate corolla, entire semicircular stigma, and two celled fruit, as well as in habit and colour. I have preferred leaving it where it was placed by Linnæus, though it differs from the rest of the *Dracænas* in some respects.—Woods, Gloucester—on the Wachusett, Monadnock and White mountains.—June.—Perennial.

147. ERYTHRONIUM.

ERYTHRONIUM AMERICANUM. *Common Erythronium.*

Bigelow, Medical Botany, Pl. lviii.

Scape naked, leaves lanceolate and involute at the point ; style club-shaped and undivided.

Syr. *ERYTHRONIUM LANCEOLATUM*. Pursh.

ERYTHRONIUM DENSCANIS. Mx.

A delicate liliaceous plant with spotted leaves. The root is a solid bulb, situated deep in the ground, brown outside, white and homogenous within. The whole plant is smooth and glossy. Scape naked, slender. Leaves two, nearly equal, lanceolate, veinless, of a dark brownish green, clouded with irregular spots, sheathing the scape with their base, and terminating in an obtuse callous point. Flower solitary, drooping. Petals six, lanceolate, yellow, the three outermost partly crimson on the outside, the three innermost having an obtuse tooth on each side near the base. In a clear sun the petals are expanded and revolute, but at night and on cloudy days they are nearly closed. Filaments flat, anthers oblong-linear. Germ obovate, style longer than the stamens, club-shaped, three lobed at top and terminating in three distinct, but not detached stigmas. Capsule oblong obovate, somewhat pedicelled.—In rich, moist soils, South Boston, Cambridge.—May.—Perennial.

* *ERYTHRONIUM BRACTEATUM*. *Bracted Erythronium*.

E. scapo bracteato; foliis lanceolatis inæqualibus.

Scape bracted; leaves lanceolate, unequal.

Leaves very unequal, the primary one being two or three times as large as the secondary. Scape shorter than the leaves with a narrow lanceolate bracte about an inch long, situated an inch or two below the flower. Corolla yellow, half as large as in the preceding species, petals gibbous at base. Stamens half as long as the corolla. Style clavate; stigmas united? Discovered by Mr. Boott on the Camel's Rump mountain, Vermont, and by him designated by the foregoing name.—June.

148. LILIUM.

LILIUM CANADENSE. L.

Common yellow Lily.

Leaves in whorls; flowers terminal, drooping; petals spreading.

A great portion of our meadows are embellished with the flowers of this lily in the first part of summer. Stem green, varying in height from one to three feet, with lanceolate leaves

surrounding it in distant whorls. Flowers sometimes one, and frequently three on a plant, bell shaped, pendulous, yellow, spotted inside; petals lanceolate, turned outward, but hardly reflexed.—June. July.—Perennial.

LILIUM SUPERBUM. *L.*

Superb Lily.

Leaves linear-lanceolate, three nerved, glabrous, lower ones whorled, twice as long as the internodes; upper ones scattered; flowers in a pyramidal raceme, corollas reflexed.

One of the most magnificent of our native plants. Stem erect, straight, from three to six feet high, bearing a large pyramid of orange coloured flowers, amounting not unfrequently to thirty or forty in number. In low grounds, rare, July.

By cultivation in a rich soil, *L. Canadense* approaches in character to this species.

LILIUM PHILADELPHICUM. *L.*

Common red Lily.

Leaves in whorls; flowers erect; corolla bell shaped, petals with claws. *L.*

The red lily is a less showy, but equally beautiful species with the first. It frequents a drier soil, and is commonly found about the margins of fields, among bushes, &c. Leaves whorled, a few sometimes scattered. Flowers one, two, or three, upright, of a dark vermilion colour, spotted. The petals are supported on long claws, which gives the flower an open appearance.—June, July.—Perennial.

149. ACORUS.

ACORUS CALAMUS. *L.*

Sweet Flag.

Summit of the stalk above the flowers very long and leaf like. *Sm.*

Sweet flag root is an officinal article in considerable estimation. At times when the plant is not in flower, the aromatic flavour of the root will readily distinguish it from the other species of flag, a name indiscriminately applied here to plants with sword shaped leaves, as *Iris*, *Typha*, &c. When in flower, the long, round, solitary spadix, projecting from the side of an ap-

parent leaf, is a sufficient mark. The spadix is closely covered with small, green flowers with six petals, and as many stamens.—Meadows.—June, July.—Perennial.

150. JUNCUS.

JUNCUS EFFUSUS. *L.* *Soft Rush. Bulrush.*

Culm naked, straight; panicle lateral, loose, thrice compounded; capsules obtuse. *Sm.*

Found every where in moist land, growing commonly in bunches. Stems perfectly simple, smooth, round, and leafless, sheathed at the base and filled with spongy pith. Panicle proceeding from a fissure in the side of the stem, much branched, and bearing many small green flowers.—June, July.—Perennial.

JUNCUS FILIFORMIS. *L.* *Filiform Rush.*

Culm naked, filiform, nodding, panicle lateral, bracted, nearly simple, capsule roundish.

Resembles the foregoing, but more slender, nodding, and the panicle further below the top.—On the borders of alpine ponds on the White mountains. Mr. Greene.

JUNCUS TRIFIDUS. *L.* *Trifid Rush.*

Culm naked, terminated by three leaves and three flowers.

A small rush, abundant near the summit of the White mountains, having a sessile spikelet of a few flowers supported by long bractes or terminal leaves.—July.—Perennial.

JUNCUS TENUIS. *Willd.* *Slender Rush.*

Culm roundish, undivided; leaves linear, channelled; corymb terminal; leaves of the calyx acuminate, larger than the obtuse, three sided capsule. *Willd.*

A small, hardy species, common about foot paths and road sides. Stem roundish, leafy at base. Leaves slender, channelled on the upper side. Corymb or cyme terminal, unequal, invested with a long leafy involucre. Capsule obtuse, a little shorter than the calyx.—June.—Perennial.

JUNCUS BUFONIUS. *L.**Toad Rush.*

Culm leafy, dichotomous ; leaves angular, subsetaceous ; flowers oblong, solitary, sessile.

A small rush of wet grounds, sometimes viviparous.—July.

JUNCUS BULBOSUS. *L.**Bulbous Rush, Black Grass.*

Culm compressed, undivided ; leaves linear, channelled, panicle cymed ; calyx obtuse, shorter than the capsule ; capsule roundish, obtuse.

A common rush of salt marshes, often giving, when in fruit, a dark colour to the tracts where it prevails. It makes good hay.—July.

JUNCUS SPICATUS. *L.**Spiked Rush.*

Leaves flat ; spike racemed, nodding, compound at base ; capsules acute.

Culm slender, with an oblong, nodding head.—On the summit of the White mountains, its only American locality with which I am acquainted.—July.

* JUNCUS MILITARIS.

Bayonet Rush.

J. folio unico, articulato, culmum superante ; panicula terminali, prolifero ; capitulis subquinquefloris.

Leaf one, jointed, longer than the culm ; panicle terminal, proliferous ; heads about five flowered.

Root creeping, scaly. Culm as large as a goose quill, two or three feet high, smooth, with a long sheath or two at base, and commonly another above the leaf. Leaf cylindrical, erect, jointed with internal partitions, inserted below the middle of the culm, and exceeding it in height by half a foot or more. Panicle terminal, erect, of half a dozen smooth branches, most of them proliferous, invested with sheathing, lanceolate bractes at base. The branchlets end in small heads of from four to six sessile flowers. Calyx segments acute, brown, edged with green. The unripe capsule is acuminate.—Discovered by Mr. Greene growing plentifully in a pond at Tewksbury.

JUNCUS POLYCEPHALOS. Mich. *Many headed Rush.*

Culm few leaved, erect ; leaves somewhat knotty ; heads round, many flowered, paniced ; calyxes linear ; stamens six. *Mich. abr.*

Syn. JUNCUS ECHINATUS. Muhl.

Common in meadows and low ground. Stem erect, firm, round, smooth. Leaves round, smooth, interrupted with numerous transverse partitions or joints. Heads resembling small burrs, sessile and pedunculated, in a proliferous panicle or umbel, with very unequal branches. Calyx leaves crowded, linear-lanceolate, very acute.—Perennial.

This plant sometimes undergoes a singular alteration in its fructification from the bite of an insect.

JUNCUS CAMPESTRIS. L. *Field Rush.*

Culm leafy. Leaves flat, hairy ; spikes terminal, sessile, or pedunculated ; capsules obtuse. *Sm.*

Hardly half a foot high in dry ground, but in wet situations much taller. Stem upright, round, leafy. Leaves short, grass like, flat, acute, the edges fringed with fine, loose hairs. Spikes terminal, umbelled, most of them on peduncles, irregular ovate, obtuse, erect or nodding. Calyx leaves lanceolate, acute. Capsules three seeded, inversely ovate, obtuse, shorter than the calyx.—May.—Perennial.

JUNCUS MELANOCARPUS. Mx. *Black fruited Rush.*

Culm leafy, leaves sublanceolate, smooth ; panicle capillary, lax ; flowers pedicelled.

Culm a foot a more in height, smooth, leafy. Leaves linear-lanceolate, glabrous, those of the root eight or ten inches long. Panicle large, nodding, decomposed, many flowered. Ultimate corymbs of from four to six flowers, of which one is sessile, the rest on capillary pedicels. Calyx acuminate. Capsule with a short beak.—At the cascade of New river in the White mountains.—June.

TRIGYNIA.

151. HELONIAS.

HELONIAS DIOICA. *Ph.**Unicorn Root.*

Scape leafy ; raceme spiked, nodding ; pedicels short, scarcely bracted ; filaments longer than the corolla ; petals linear ; leaves oblong-lanceolate.

Syn. *VERATRUM LUTEUM.* *Willd.*

In various parts of Connecticut.—July.—Perennial.

152. MEDEOLA.

MEDEOLA VIRGINICA. *L.**Cucumber Root.*

Leaves in whorls.

Syn. *GYROMIA VIRGINICA.* *Nutt.*

Few plants exceed this in geometrical regularity of structure and appearance. The stem is erect, smooth, and commonly invested with loose tufts of cotton-like down. The leaves are in two whorls, the lowermost a few inches from the top, consisting of about seven or eight broad lanceolate leaves, the uppermost of three, and rarely four ovate ones. The flowers are terminal, and bend down through the interstices of the upper leaves. Petals lanceolate, greenish white, revolute. Stamens erect, slender. Germ single oval, stigmas three, rarely four, reflexed, twice as long as the stamens, of a reddish colour as well as the stamens. Berry three celled, many seeded. The root is tuberos, with a flavour resembling the cucumber.—In low woods and swamps.—June, July.—Perennial.

153. TRILLIUM.

TRILLIUM CERNUUM. *L.**Nodding Trillium.*

Flower on a footstalk, drooping. *Willd.*

This is the only species I have observed in the immediate neighbourhood of Boston. Leaves three, large, roundish, or rhomboid, pointed. Flower terminal, from the bosom of the leaves, bending down so as to be sheltered beneath them. Calyx leaves three. Petals three, alternate with the calyx leaves, nearly white, reflexed. Stigmas three, recurved.—In shady thickets,—May, June.—Perennial.

TRILLIUM ERECTUM. *L.**Erect Trillium.*

Peduncle inclined ; flower nodding ; petals ovate ; acuminate, flat, spreading ; much broader, but scarcely longer, than the calyx ; leaves broad, rhomboidal, acuminate, sessile.

Flowers dull brownish purple, greenish outside ; odour offensive. Root used in medicine.—In old woods in the middle and western parts of the state.—May.—Perennial.

TRILLIUM PICTUM. *Pursh.**Painted Trillium.*

Peduncle somewhat erect, petals oval-lanceolate, acute, recurved, twice as long as the calyx ; leaves ovate, acuminate, rounded at base, and abruptly petioled.

Petals white, striped at base with purple, undulate at the edge. A very handsome species.—On the Ascutney mountain, Vermont.—May, June.

154. TRIGLOCHIN.

TRIGLOCHIN MARITIMUM. *L.**Sea Arrow Grass.*

Capsule six celled, grooved, ovate. *Willd.*

The leaves of this plant are rush-like, smooth, fleshy, flexible, and semicylindrical. They have a sweetish, not unpleasant taste. Stalk solitary, bearing a long, dense spike of greenish flowers on very short pedicels. They have six leaves, three of which may pass for calyx and three for petals. • Anthers nearly sessile.—Salt marshes and ditches.—June.—Perennial.

The cultivation of this plant for cattle has been recommended.

155. RUMEX.

RUMEX CRISPUS. *L.**Curled Dock.*

Calyx valves ovate, entire, all bearing grains ; leaves lanceolate, waved, acute.

Root fusiform. Stem furrowed, smooth. Leaves lanceolate, rather acute, waved and curled on the margin. Racemes of half whorls, leafy towards the base. Valves enclosing the seed heart-shaped, reticulated, very slightly serrate or repand on the mar-

gin, each bearing a grain, of which one is much larger than the other two.—Rubbish and cultivated grounds.—June.—Perennial.

RUMEX OBTUSIFOLIUS. L. *Broad leaved Dock.*

Valves toothed, one chiefly graniferous ; root leaves heart shaped, obtuse ; stem roughish. *Sm.*

Grows in the same places as the last, but is somewhat later in its appearance. Root more divided. Stem furrowed, rough near the top. Leaves large, oblong, heart-shaped, obtuse at the end ; the petiole and midrib often red on the upper side. Calyx leaves heart-shaped, reticulated, furnished with long, subulate teeth, one only bearing a full, distinct grain.—July.—Perennial.

These two species, originally from Europe, are among our most troublesome weeds.

* **RUMEX PALLIDUS.** *White Dock.*

R. foliis lineari-lanceolatis, acutis ; spicis gracilibus ; valvulis ovatis, integris, granum vix superantibus.

Leaves linear-lanceolate, acute ; spikes slender ; valves ovate, entire, hardly larger than the grain.

Stems numerous, ascending, smooth, round, slightly furrowed. Leaves smooth, linear-lanceolate, acute, petioled, more or less waved on the margin. Spikes slender, owing to the shortness of the pedicels, the largest with a leaf at base. Calyx linear, acute. Petals ovate, obtuse, erect. Stamens six, anthers whitish, two lobed. Styles three. Fruit crowded, the valves ovate, entire or furnished with a single tooth at base, with a large, white, fleshy, obtuse grain nearly covering the back of each.—Salt marshes.—June.—Perennial.

First sent by Dr. Nichols from Danvers.

RUMEX BRITANNICA. L. *Yellow rooted Water Dock.*

Valves very entire, all of them graniferous ; leaves lanceolate with obsolete sheaths.

A tall species growing in deep mud in watery situations. Leaves broad-lanceolate, smooth and even. Stem furrowed, surrounded above the joints with torn sheaths, a character which

distinguishes it from *Rumex verticillatus*, another aquatic species with long tubular sheaths. Valves of the calyx large, heart-shaped, entire, each bearing a grain.—July.—Perennial.

RUMEX ACETOSELLA. L. *Sorrel. Sheep's Sorrel.*

Flowers dioecious, leaves lanceolate, hastate; calyx valves without grains.

A common and unprofitable intruder into every species of ground, but particularly such as are dry and sandy. The root leaves furnish a good example of the halberd shape or hastate form. Flowers in paniced racemes small, with stamens and styles on distinct plants. Valves ovate, entire, destitute of grains. The acid properties of the plant are well known.—May.—Perennial.

POLYGYNIA.

156. ALISMA.

ALISMA PLANTAGO. L. *Water Plantain.*

Leaves ovate, acute, capsules obtusely three cornered. *Sm.*

Common in small ponds and ditches. Leaves radical, petioled, ovate, acute, smooth, nerved, entire. Panicle decomposed, its branches given off in whorls with bractes. Flowers with three calyx leaves and three deciduous petals of a purplish white. Capsules three cornered, obtuse.—June, July.—Perennial.

Class VII. HEPTANDRIA. Seven stamens.

Order I. MONOGYNIA. One style.

157. *TRIENTALIS.* Calyx seven leaved; corolla seven parted, equal; berry one celled, juiceless.

HEPTANDRIA.

MONOGYNIA.

157. TRIENTALIS.

TRIENTALIS AMERICANA. *Ph.* *American Trientalis.*

Leaves lanceolate, serrulate, acuminate; petals acuminate.

Syn. TRIENTALIS EUROPEA. *Mx.*

A plant seldom exceeding half a foot in height, having its leaves chiefly in a tuft or whorl at the top, with one or more white star-like blossoms above. Leaves lanceolate, minutely serrate, shining, acuminate, pointed. Flowers on filiform peduncles. The number of stamens and divisions of the calyx and corolla is commonly seven, but often varies to six or eight; segments of the calyx linear. Petals ovate, acuminate.—In low woods, particularly among the pine trees on Craigie's road.—May, June.—Perennial.

On comparison of specimens I am satisfied that the American species is distinct from the European in having the leaves minutely serrulate, and the petals acuminate; though these marks are not noticed by Pursh.

Class VIII. OCTANDRIA. *Eight stamens.*Order I. MONOGYNIA. *One style.*

158. EPILOBIUM. Calyx four cleft, tubular, superior; corolla four petalled; capsule oblong; seeds feathered.

159. ENOTHERA. Calyx four cleft, tubular, superior; corolla four petalled; capsule four celled, four valved; seeds naked.

160. RHEXIA. Calyx four cleft, inferior ; corolla four petalled ; anthers curved ; capsule four celled, in the body of the calyx.

161. MENZIESIA. Calyx one leaved ; corolla monopetalous, ovate ; filaments inserted in the receptacle ; capsule four celled, divided by the inflexed edge of the valves ; seeds numerous.

162. DIRCA. Calyx none ; corolla tubular, the border obsolete ; stamens longer than the tube ; berry one seeded.

163. VACCINIUM. Calyx superior, four toothed ; corolla monopetalous ; stamens inserted on the receptacle ; berry four celled, many seeded.

Order II. DIGYNIA. Two styles.

164. CHRYSOSPLENIUM. Calyx four cleft, coloured ; corolla none ; capsule two beaked, one celled, many seeded.

Order III. TRIGYNIA. Three styles.

165. POLYGONUM. Calyx five parted, resembling a corolla ; corolla none ; seed one, angular, inclosed in the calyx ; stamens and pistils irregular in number.



OCTANDRIA.

MONOGYNIA.

153. EPILOBIUM.

EPILOBIUM ANGUSTIFOLIUM. L. *Spiked Willow Herb.*

Leaves scattered, linear-lanceolate, entire, veiny ; flowers unequal. *Ait.*

Syn. *EPILOBIUM SPICATUM.* Pers. *Muhl.*

A tall plant bearing a profusion of blue flowers. Stem round, erect, with alternate branches near the top. Leaves narrow, lanceolate, smooth, glaucous underneath, nearly sessile. Racemes terminal, leafless. Flowers on footstalks, irregular; calyx linear, acute; petals light bluish purple, obovate, unguiculate, standing on the long, glaucous or whitish germ. Stamens unequal, four long and four short, with oblong anthers. Style at first club shaped, but at length separating into four revolute branches. When the pods are opening, the plant appears covered with the downs of the seeds.—In woods and low grounds. A large quantity grows near Brighton new road.—June, July.—Perennial.

EPILOBIUM LINEARE. *Muhl.* *Linear Willow Herb.*

Stem terete, pubescent, branching at top; leaves linear, entire, revolute at the margin.

Stem round, a little, downy, branching. Leaves scattered, linear, entire, revolute at the edge. Flowers axillary, on short stalks. Germs downy, square, green. Calyx leaves oblong, acute. Petals inversely heart shaped, white with a reddish tinge. Stigma capitate.—Moist woods.—August.—Perennial.

EPILOBIUM COLORATUM. *Muhl.* *Coloured Willow Herb.*

Leaves lanceolate, serrulate, petioled, opposite, the upper ones alternate; stem round, pubescent.

A more branching plant than the foregoing. Stem erect, round, with opposite pubescent branches. Leaves lanceolate, glabrous, their veins often of a red colour, on short petioles, the bases of which unite round the stem in an elevated line. Flowers axillary, purple, regular, with very long, linear germs.—Meadows and swamps.—July, August.—Perennial.

EPILOBIUM ALPINUM. *L.* *Alpine Epilobium.*

Stem simple, roundish, one or two flowered; leaves opposite, elliptical, entire; flowers sessile.

Leaves rather more ovate than in the European plant.—On the White mountains of New-Hampshire.—July.

159. CENOTHERA.

CENOTHERA BIENNIS. L.

Tree Primrose.

Leaves ovate-lanceolate, flat ; stem a little rugged and villous ; stamens shorter than the corolla. *Willd.*

The large, yellow flowers of this plant are frequently seen overtopping the fences by which they grow, during most of the summer. In the country it is vulgarly known by the name of *Scabish*, a corruption probably of *Scabious*, from which however it is a very different plant. Stem from three to five feet high, rough, hairy, and branching. Root leaves petioled ; stem leaves sessile ; both pubescent, slightly toothed. Flowers solitary, axillary. Germ sessile, four grooved, surmounted by the long, tubular calyx, which divides into four reflexed segments ; petals large, roundish, sometimes emarginate. This plant, originally American, is now naturalized, and very common throughout Europe.—Biennial.

CENOTHERA PUMILA. L.

Dwarf Tree Primrose.

Leaves lanceolate, very entire, obtuse ; capsules slightly pedicelled, elliptic-obovate, angular. *Willd.*

Stem oblique at base, ascending, round, slender, about a foot high. Leaves sessile, blunt. Flowers yellow, small, nearly sessile, in a leafy spike. Petals inversely heart-shaped. Stamens shorter than the corolla. Capsules inversely ovate, with eight angles.—Pastures.—Perennial.

This plant is exactly the *C. pumila* of *Custis'* magazine, t. 355.

160. RHEXIA.

RHEXIA VIRGINICA. L.

Virginian Rhexia.

Stem with four winged angles ; leaves sessile, oval-lanceolate, serrate-ciliate, calyx with glandular hairs.

Stem square with membranous angles. Leaves opposite, oval, three nerved, with scattered hairs on both sides and on the margin. Peduncles axillary and terminal. Calyx urn-shaped, hairy, with four acute segments ; petals purple and finely contrasted with

the long, crooked, yellow anthers. Style declining.—Low grounds.—July, August.—Perennial.

161. MENZIESIA.

MENZIESIA CÆRULEA. Swz. *Purple Menziesia.*

Leaves scattered, crowded, linear, obtuse, cartilaginously denticulate; peduncles terminal, aggregate, one-flowered; flowers campanulate, decandrous; calyx acute.

Syn. ERICA CŒRULEA. Willd.

A beautiful alpine shrub resembling a heath in its foliage and flowers. The leaves are not unlike those of the fir tribe. Peduncles and calyx pubescent. Calyx in five segments, purplish, oblong-linear, obtuse. Corolla purple, cylindric-ovate, divided at the mouth into five auriculated emarginate segments. Filaments roundish, purple, nearly as long as the corolla, inserted in the receptacle. Anthers oblong, bifid at top. Style erect, green, as long as the stamens. Germ globular. Capsule roundish with five longitudinal depressions, five celled, the dissepiments formed by the inflexed margins of the valves. Seeds oblong ovate.—On the barren summit of the White mountains.—July.

162. DIRCA.

DIRCA PALUSTRIS. *Leather Wood.*

Bigelow, Medical Botany, Pl. xxxvii.

This is an irregular shrub somewhat distinguished by the horizontal tendency of its branches and leaves. The branches have an interrupted or jointed mode of growth. They are flexible and exceedingly strong and tough. Leaves scattered or alternate, with very short petioles, oval, entire, subacute, downy when young; smooth and membranous when fully grown, and pale on the under side. The flowers appear much earlier than the leaves. Previously to their emerging they exist in miniature within a small hairy bud, which occupies a sheath or cavity in the end of each flowering branch. They are commonly in bunches of three together with their peduncles cohering. Each flower is about half an inch long, of a yellow colour and without calyx. The corolla is funnel shaped, with a contraction near

the base, and another in the middle, its border dilated, and slightly and irregularly toothed. Stamens eight, much longer than the corolla, the alternate ones longest, the filaments capillary and inserted into the tube; anthers roundish. Germ ovate, placed obliquely, the style appearing to issue from one side. Style capillary, curved, and longer than the stamens. The fruit is a small, oval, acute, red, one-seeded berry.—Low woods and marshes on Kennebec river, also at Keene, New Hampshire.—April and May.—Perennial.

163. VACCINIUM.

VACCINIUM RESINOSUM. L. *Black Whortleberry or Huckleberry.*

Racemes bracted; corollas ovate; leaves elliptic, somewhat acute, entire, deciduous, sprinkled with resinous dots underneath. *Ait.*

The leaves of this very common shrub are oval, the young ones acute, the older ones blunt; their under surface covered with shining, adhesive, resinous particles. Flowers in lateral clusters. Corolla five cornered, ovate, contracted at the mouth, of a dull reddish green. Fruit globular, black, sweet.—Woods and hills.—June.

VACCINIUM TENELLUM.

Low Blueberry.

Leaves sessile, lanceolate, serrulate, shining; fascicles crowded, subterminal, sessile; corollas ovate.

A low early flowering shrub upon hills and pastures, growing in beds or bunches. Leaves numerous, broad-lanceolate, serrulate, shining on both sides. Flowers in short, crowded clusters. Segments of the calyx ovate, acuminate, spreading. Corolla reddish white, ovate cylindrical. Anthers included. Style as long as the corolla. Berries early, large, blue, eatable.—May.

VACCINIUM CORYMBOSUM.

Blue Bilberry.

Leaves oblong-oval, rather smooth; racemes subsessile; corollas cylindrical; style subexserted.

Syn. V. AMOENUM. Ait.

This shrub is six or seven feet or more in height when full

grown, though it flowers when of but small size. The bark of the young twigs is of a light green or purplish, minutely dotted with white. Leaves at flowering time generally about half grown, pale green or purplish, oblong, acute, nearly entire, perfectly smooth on both sides, or with the veins hairy underneath. Flower in short-nodding racemes or corymbs with smooth pedicels, very numerous, large and white. Segments of the calyx rather acute, with a glaucous cast. Corolla oval or cylindrical, contracted at the mouth, with spreading segments. Filaments hairy, anthers included, long awned. Style slightly exerted. Berries large, covered with blue powder, acid and sweet.—Swamps.—May.

The flowers are acid, and contain much honey.

This is our common large bilberry. It differs from *V. corymbosum* of Pursh, in having a glaucous fruit and some other marks of less importance. As a variety it may be called *glaucocarpum*. The *V. corymbosum* of Elliott, with lanceolate leaves and awnless anthers, seems a different species.

VACCINIUM DISOMORPHUM. Mx.

Black Bilberry.

Leaves oblong-oval, acute; clusters bracted with scales; calyx obtuse; corolla ovate.

Shrub about five feet high, its twigs reddish or ash coloured. The leaves, which hardly begin to unfold until flowering time, are oval, acuminate, nearly entire, quite hairy underneath. Flowers small, in very short racemes, with green or purplish peduncles. Calyx segments obtuse. Corolla ovate, white with a reddish cast, contracted at the mouth. Anthers included. Style exerted. Berries small, polished black, crowned with the erect cylindrical calyx.—Swamps.—May.

This species resembles the preceding in its general habit, size, and places of growth. Its flowers and fruit are about half the size, and its calyx obtuse. In fruit the calyx becomes more acute and remarkably long. I have preferred applying the name of Michaux to the present species, rather than introduce new names into this uncertain and variable genus.

VACCINIUM HIRTELLUM. Ait.

Hairy Whortleberry.

Hairy; leaves obovate-oblong, entire; racemes

long, bracted ; corollas angular, campanulate ; fruit hispid.

Leaves oblanceolate, or wedge shaped and acute, entire, mucronate, ciliate, hairy, shining above, covered with resinous dots underneath. Racemes long, hairy, erect. Each pedicel proceeds from the axil of an oval leaflet or bracte, and is furnished about its middle with from one to three bracteolæ. Calyx hairy with half ovate segments. Corolla large, white, globular or bell shaped, remarkable for its distinct, five angled form, its segments a little recurved. Anthers included. Style as long as the corolla. Berry hairy, black, watery and insipid.—In the edge of Richards' pond, Brookline.—June.

Very nearly allied to *V. dumosum* of Pursh, and perhaps only a variety. Its aquatic growth and hirsute berries, which I do not find mentioned by American botanists, have led me to separate it from that species, with which it is usually considered synonymous.

VACCINIUM VIRGATUM. *Muhl.*

Blue Whortleberry.

Leaves elliptical, acute, smooth, serrulate or entire ; flowering branches elongated, with sessile racemes ; corollas oval.

Bark of the twigs generally of a yellowish green colour and warty. Leaves smooth on both sides, oval, entire, or slightly serrulate, of a pale green, inclining to glaucous. Flowers in short racemes on the ends of the twigs which project beyond the leaves. Segments of the calyx rather obtuse, thin and spreading. Corolla oval with acute reflexed segments. Style as long as the corolla. The calyx turns blue in drying. Berries large, covered with blue powder very sweet, and commonly known by the name of blue huckleberries.—Dry woods and woody hills.—June.

This is the *V. virgatum* of Muhlenberg, though probably not of Pursh.

VACCINIUM FRONDOSUM. *L.*

Late Whortleberry.

Leaves oblong-obovate, obtuse, entire, glaucous beneath with minute, resinous dots ; racemes loose,

bracted ; pedicels filiform ; corolla globose-campanulate ; anthers included.

Distinguished by its loose mode of flowering, the pedicels being very long and slender, with small lanceolate bractes. Flowers short, campanulate, about half as long as those of *V. resinosum*. The leaves under a magnifier exhibit small resinous dots on their lower surface. Berries large, bluish, sweet, few in number and ripening with us later than the other species.—Low woods, Cambridge.—June.

VACCINIUM STAMINEUM. L. *Green Whortleberry. Deer Berry.*

Leaves oval, acute, entire, glaucous beneath ; pedicels solitary, axillary, filiform ; corollas spreading-campanulate ; anthers exerted, awned on the back ; fruit pyriform.

Leaves large, mostly smooth, those of the flowering twigs much smaller. Pedicels long and slender. Corolla white and very open, with the anthers projecting far beyond it, a character which distinguishes it from the other species here described. Style longer than the stamens. The berries which I have not seen are said to be greenish white.—Grows in the western parts of the state.—June.

* *VACCINIUM ULIGINOSUM*, β *alpinum*. *Mountain Whortleberry.*

V. procumbens ; foliis obovatis, integris ; floribus subsolitariis ; baccis oblongis, stylo coronatis.

Procumbent ; leaves obovate, entire ; flowers subsolitary ; berries oblong, crowned with the style.

Stem procumbent, growing to the size of the finger. Leaves small, obovate, roundish-obtuse, entire, smooth both sides, pale above, glaucous and reticulated beneath. Flowers single or in pairs, nearly sessile. Segments of calyx obtuse, corolla ovate, short, ending in four or five revolute segments. Anthers about eight, included, two horned. Style shorter than the corolla. Berries oblong, deep blue, crowned with the connivent calyx and persistent style.—On the alpine tops of the highest mountains,

Moose Hillock, Camel's Rump, and the White mountains.—July.—The leaves vary to oblong and orbicular.

This little shrub resembles *V. uliginosum* of Europe, and is probably a variety. Externally the fruit exactly resembles in shape that of *Gaultheria procumbens*.

VACCINIUM VITIS IDÆA. L.

Cow Berry.

Stem creeping; leaves evergreen, obovate, denticulate, revolute, dotted underneath; racemes terminal, nodding.

This plant has some resemblance to the common cranberry, but is larger. Stem creeping with herbaceous, angular branches. Leaves small, coriaceous, shining, dotted beneath, revolute at the edge, obsolete serrulate. Flowers campanulate-cylindrical, reddish, four cleft. Berries red, acid.—On the Monadnock and other mountains. In Lynn, Mr. Oakes.—June.

Subgenus OXYCOCCUS. Corolla four parted with linear, revolute segments.

VACCINIUM MACROCARPON. Ait.

Craneberry.

Leaves evergreen, entire, oval-oblong, obtuse; stems filiform, creeping. *Ait. abr.*

Syn. VACCINIUM OXYCOCCUS oblongifolius. Mich.

The craneberry vine spreads in large beds at the bottom of the grass in boggy meadows. Stems slender, creeping. Leaves numerous, small, dark above, whitish underneath. Flower stalks axillary, slender; corollas white, their segments long and reflexed. Anthers projecting. The fruit is large, and esteemed superior to the European craneberry.—Perennial.

DIGYNIA.

164. CHRYSOSPENIUM.

CHRYSOSPENIUM OPPOSITIFOLIUM. L. Golden Saxifrage.

Leaves opposite, roundish, narrowed to a petiole, slightly crenate.

A small, early, smooth plant in wet places. Stem quadrangular. Leaves opposite, sometimes single, reniform, crenate. Segments of the calyx four, roundish-rhomboidal of a green colour

marked with purple. Anthers scarlet before opening. Nectary a dark, purplish, elevated ring, growing to the corolla, and surrounding the two conical germs. The terminal flower is often decandrous.—Wet places.—April, May.—Perennial.

TRIGYNIA.

165. POLYGONUM.

POLYGONUM AVICULARE. *L.*

Knot Grass.

Stem procumbent, herbaceous ; leaves lance-oval ; flowers axillary, subsessile, with eight stamens and three styles.

A hardy weed growing every where, and even common among the bricks and paving stones. Stem slender, spreading, striated, interrupted with frequent joints, branching ; the joints furnished with short stipules. Leaves oblong-oval, smooth. Flowers minute, white, in the axils of the leaves.—All summer.—Perennial.

POLYGONUM TENUE. *Mx.*

Slender Polygonum.

Leaves linear, straight, acuminate ; sheaths tubular, villous at top ; stem slender, erect, branched, acute angled ; flowers alternate, subsolitary.

Syn. POLYGONUM LINIFOLIUM. Muhl.

A small erect species with scattered, axillary, nearly sessile flowers.—Dry soils.—July.—Annual.

POLYGONUM HYDROPIPER. *L.*

Water Pepper.

Stamens from six to eight ; styles two, half united ; leaves lanceolate, spotless, waved ; spike filiform, nodding ; stem erect.

Syn. POLYGONUM HYDROPIPEROIDES. Pursh.

POLYGONUM PUNCTATUM. Ell.

Well known for its intense acrimony. Leaves lanceolate, chiefly smooth, with pellucid points. Stipules loose, glabrous, fringed with hairs at top. Spikes of flowers, slender and nodding. Michaux observed eight, and never less than seven sta-

mens in this plant in America.—Rubbish in low grounds, ditches, &c.—August, September.—Annual.

It appears perfectly similar to the European plant, which is punctate with pellucid dots, and varies from six to eight stamens. See Rees' Cyclopaedia, &c.

POLYGONUM HYDROPIPEROIDES. *Mx.* *Hairy Polygonum.*

Stamens eight, styles three, half united; stipules hairy and ciliate; leaves lanceolate, sessile, somewhat hairy; spikes linear, weak; bractes subimbricate, ciliate.

This plant, which is occasionally found about Boston in low grounds, is not the *P. hydro Piperoides* of Pursh, nor *P. mite* of Elliott. The whole stem is hairy and branched, and the spikes numerous. The rest agrees exactly with Michaux's description, except that the flowers, as far as I have observed, have fewer stamens.—July.

POLYGONUM PERSICARIA. *L.* *Spotted Polygonum.*

Stamens six; styles two, half united; spikes ovate-oblong, erect; peduncles smooth; stipules ciliate. *Curt.*

This plant is without acrimony. Leaves spreading, lanceolate, acute, and commonly marked with a dark spot, somewhat heart-shaped, in the centre. Stipules tubular, short, ciliated at top. Spikes terminal, on smooth footstalks, erect, oblong. Flowers rose coloured.—In the same soils as the last.—July, August.—Annual.

POLYGONUM VIVIPARUM. *L.* *Alpine Polygonum.*

Stem simple, one spiked; leaves lanceolate, revolute at the edge.

A small species with a few linear-lanceolate leaves and a slender spike which generally bears stem bulbs at its lower part.—On the White mountains, New-Hampshire.—July.

POLYGONUM VIRGINICUM. *Virgated Polygonum.*

Flowers pentandrous, digynous, unequal, leaves broad-oval; spikes virgated with remote flowers.

This species is distinguished by its very long, virgated, flowering branches. Stem two or three feet high, somewhat hairy. Sheaths hairy, ciliate, entire or split. Leaves on short petioles, ovate-lanceolate, acuminate. Peduncles or flowering branches often a foot long. Flowers small, greenish, scattered, with generally five stamens. Seed compressed, tipped with the deflected cloven style.—Woods.—June, July.—Perennial.

POLYGONUM AMPHIBIUM. L. *Amphibious Polygonum.*

Stamens five, styles two, half united; leaves oblong-lanceolate, acute, rough at the edge; spike cylindrical.

Syn. POLYGONUM AMPHIBIUM. β. emersoni. Mx.

Distinct from the following species by its leaves, which are generally lanceolate, though sometimes rounded at base, the edges ciliate-serrulate, so as to feel rough, the veins also having sometimes the same character. Stem fleshy, decumbent, rooting. Sheaths tubular, smooth, entire, the lower ones sometimes ragged or ciliate. Spike solitary, terminal, at first ovate, at length cylindrical. Flowers large, rose coloured.—Borders of ponds and ditches, growing above water.—August.—Perennial.

It agrees perfectly with European specimens.

POLYGONUM COCCINEUM. Willd. *Floating Polygonum.*

Stamens five, styles two, half united; leaves oblong, smooth throughout, lucid; spike cylindrical.

Syn. POLYGONUM AMPHIBIUM. α. nitens. Mx.

A more perfectly aquatic species than the last, better distinguished from it by the entire smoothness of its leaves than by the characters usually given. Stem rooting at the joints. Leaves mostly floating, green and shining above, purplish beneath, without hairs, commonly oblong and obtuse at both ends, sometimes hearted at base and subacute. Sheaths entire, the lower ones sometimes ragged. Spike terminal, ovate by the expanding of the lower flowers first, at length cylindrical. Flowers rose coloured.—In deep waters.—August.—Perennial.

POLYGONUM ARTICULATUM. L. *Jointed Polygonum.*

Stamens eight, styles three; spikes panicled, fili-

form ; flowers solitary, pedunculated ; bractes imbricate, truncate ; leaves linear.

A delicate, erect species with numerous spikes. Stem straight, slender, branching, with truncated sheaths. Leaves small, linear. The spikes are jointed by a succession of imbricate sheathing bractes, from each of which proceeds a capillary, nodding peduncle, bearing a handsome, reddish white flower.—Dry hills and pastures.—August.—Annual.

POLYGONUM SAGITTATUM. *L.*

Scratch Grass.

Stem prickly backward ; leaves sagittate ; flowers in heads, with eight stamens and three styles. *Mich.*

Stem slender, four angled, the angles rough backward with small prickles. Leaves arrow-shaped, oblong, on short petioles, the petiole and mid rib rough backward. Flowers in small heads on the ends of the branches, white or purplish.—Wet ground.—July.—Annual.

POLYGONUM ARIFOLIUM. *L.*

Hastate Polygonum.

Stem prickly backward ; leaves hastate ; spikes few flowered, flowers distinct, with six stamens and two styles. *Mich.*

Stem as in the last. Leaves halberd-shaped, twice as large as the last, thin and tender. The stem terminates with a few separate, pale, reddish flowers.—Found in a marshy spot near Sweet Auburn, Cambridge.—June, July.—Annual.

POLYGONUM CONVULVULUS. *L.*

Black Bindweed.

Leaves heart-arrow shaped ; stem twining, angular ; segments of the calyx bluntly keeled. *Sm.*

Stem twining, climbing on other plants. Leaves alternate, petioled, heart-shaped, with the hinder lobes acute. Branches axillary. Flowers in terminal, interrupted spikes whitish, the three principal segments of the calyx furnished with a keel, but not winged. Flowers all summer in waste and cultivated ground.—Annual.

POLYGONUM SCANDENS. *L.* *Climbing Polygonum.*

Leaves heart-shaped; stem twining, angular; segments of the calyx winged.

Stem smooth, climbing. Leaves petioled, heart-shaped, with a deep sinus, acuminate. Branches axillary. Flowers in long leafy racemes. Calyx much larger than in the last species, with three broad, membranous expansions, corresponding to the angles of the seed.—Cambridge.—August.—Perennial.

POLYGONUM CILINODE. *Max.* *Running Polygonum.*

Leaves heart shaped; stipules subacute, ciliate at base, stem angular, running or climbing, roughish; calyx obtusely carinate.

Stem purplish, running or twining, with a ring of hairs at each joint; calyx of the fruit without wings.—About woods, &c.—July, August.—Annual.

POLYGONUM FAGOPYRUM. *L.* *Buckwheat.*

Racemes paniced, stem erect, unarmed; leaves heart sagittate, angles of the seed equal.

Common buckwheat is sure to remain as a weed about lands where it has been cultivated.—June.—Annual.



Class IX. ENNEANDRIA. *Nine stamens.*

Order I. MONOGYNIA. *One style.*

166. LAURUS. Calyx none; corolla six parted, resembling a calyx; nectary three glands, surrounding the germ, each ending in two bristles; inner filaments with two glands each: drupe one seeded.

ENNEANDRIA.

MONOGYNIA.

166. LAURUS.

§ *Subgenus* EUOSMUS. *Polygamous or diœcious. Six corpuscles instead of the nectary.*

LAURUS BENZOIN. *L.* *Fever Bush. Spice Wood.*

Leaves obovate, entire, annual; flowers diœcious.

Syn. LAURUS PSEUDO-BENZOIN. *Mich.*

An aromatic shrub with a flavour resembling Benzoin. Early in May, before the leaves are fully expanded, it puts forth small sessile umbels of pale greenish flowers. Calyx of six oblong segments. Stamens nine, six exterior and three interior, separated by six short clavate bodies resembling the filaments without anthers. The leaves are oval or inversely ovate, acute at base, slightly acuminate, nearly smooth, pale underneath, and somewhat pubescent. Berries red. It grows in low situations at Brighton and elsewhere, but it is not very common in the environs of Boston.

LAURUS SASSAFRAS. *L.* *Sassafras Tree.*

Leaves deciduous, entire, and lobed; flowers diœcious. *Mich.*

In favourable situations the Sassafras rises into a pretty large tree. The bark of the young twigs is smooth and green. The leaves are partly oval, and partly in two or three large lobes, entire on their margin, and downy underneath. The oval ones appear first. Flowers greenish yellow, appearing in May and June in clusters at the end of the last year's shoots. Bractes linear, pubescent. Petals oblong, obtuse. Stamens in the perfect flowers six. Style much longer than the stamens. Germ globular. The barren flowers are more umbelled with longer stamens, six exterior and three interior, with six glandular corpuscles at base. Fruit oval, blue, on fleshy incrassated stalks.

The whole of the Sassafras tree has a strong, spicy flavour,

which is most powerful in the bark of the root. The young twigs, and especially the pith, abound in mucilage. When first introduced into Europe it acquired great medicinal reputation, and was sold at the high price of fifty livres per pound. An express treatise entitled *Sassafrasologia* was written to celebrate its virtues. Its properties however appear to be those which are common to other warm aromatics.

Class X. DECANDRIA. Ten stamens.

Order I. MONOGYNIA. One style.

A. Flowers monopetalous.

167. EPIGÆA. Calyx double ; the outer three leaved, the inner five parted ; corolla salver shaped ; capsule five celled.

168. GAULTHERIA. Calyx double ; the outer two leaved, the inner five cleft ; corolla ovate ; capsule five celled, covered by the inner calyx, which becomes similar to a berry.

169. ARBUTUS. Calyx five parted ; corolla ovate, pellucid at the base ; berry superior, five celled.

170. ANDROMEDA. Calyx five parted ; corolla ovate ; capsule superior, five celled, the partitions from the middle of the valves.

171. RHODODENDRON. Calyx five parted ; corolla somewhat funnel form ; stamens declined ; capsule five celled.

172. KALMIA. Calyx five parted ; corolla salver shaped, with ten prominences underneath, and the border five horned ; capsule five celled.

B. *Flowers many petalled.*

173. *PODALYRIA*. Corolla papilionaceous ; keel compressed, somewhat longer than the banner ; legume inflated, many seeded.

174. *CASSIA*. Corolla unequal, five petalled ; three upper anthers barren, three lower ones beaked ; loment flat.

175. *RHODORA*. Calyx five toothed ; corolla three petalled, unequal ; stamens declined ; capsule five celled.

176. *LEDUM*. Calyx minute, five toothed ; corolla flat, five parted ; capsule five celled, opening at base.

177. *CLETHRA*. Calyx five leaved ; petals five ; stigma three parted ; capsule three celled, three valved.

178. *PYROLA*. Calyx five leaved ; petals five ; capsule superior, opening at the angles, many seeded.

179. *MONOTROPA*. Calyx none ; petals ten, the five outer ones gibbous at the base ; capsule five valved ; a fifth part of the fructification often wanting.

Order II. DIGYNIA. Two styles.

180. *SCLERANTHUS*. Calyx five cleft, inferior ; corolla none ; seeds two, inclosed in the calyx.

181. *SAXIFRAGA*. Calyx five parted ; corolla five petalled ; capsule two beaked, one celled ; many seeded.

182. *TIARELLA*. Calyx five parted ; petals five, entire, inserted on the calyx ; capsule one celled, two valved, one valve largest.

183. *MITELLA*. Calyx five cleft ; petals five,

pinnatifid, inserted on the calyx ; capsule one celled, two valved ; valves equal.

184. *SAPONARIA*. Calyx tubular, naked ; petals five, with claws ; capsule oblong, one celled.

185. *DIANTHUS*. Calyx tubular with scales at the base ; petals five, with claws ; capsule cylindrical, superior, one celled.

Order III. TRIGYNIA. Three styles.

186. *ARENARIA*. Calyx five leaved, spreading ; petals five, entire ; capsule superior, one celled, many seeded.

187. *STELLARIA*. Calyx five leaved, spreading ; petals five, deeply cloven ; capsule superior, one celled, many seeded.

188. *SILENE*. Calyx one leaved, swelling ; petals five, with claws, crowned at the mouth ; capsule superior, three celled, many seeded.

189. *CUCUBALUS*. Calyx one leaved, inflated ; petals five with claws, not crowned ; capsule superior, three celled.

Order V. PENTAGYNIA. Five styles.

190. *PENTHORUM*. Calyx five or ten cleft ; petals five or none ; capsule five celled, five beaked.

191. *CERASTIUM*. Calyx five leaved ; petals five, cloven ; capsule superior, one celled, ten toothed.

192. *SPERGULA*. Calyx five leaved ; petals five, undivided ; capsule superior, ovate, one celled, five valved.

Order VI. DECAGYNIA. Ten styles.

193. *PHYTOLACCA*. Calyx five leaved, resembling a corolla ; corolla none ; berry superior, ten seeded.

DECANDRIA.

MONOGYNIA.

167. EPIGÆA.

EPIGÆA REPENS. *L.**Ground Laurel.*

Leaves heart-ovate, entire; corollas cylindrical.
Sw.

Stem woody, trailing, hairy. Leaves alternate, oblong, heart-ed at base, hairy and rough, with hairy petioles. Flowers fragrant, purple, flesh coloured, or white, in terminal or axillary bunches, of from two to six, on very short hairy peduncles. Calyx double. Corolla salver shaped, longer than the calyx, hairy within. Filaments inserted in the bottom of the tube, hairy; anthers oblong. Germ ovate, hairy; style straight; stigma with five points.—In woods, Gloucester.—April, May.

168. GAULTHERIA.

GAULTHERIA PROCUMBENS.

Partridge Berry.

Bigelow, Medical Botany, Pl. xxii.

Stem prostrate with branches ascending. Leaves in a terminal tuft, obovate with a few ciliate serratures. Flowers axillary.

The stem, or as it might be called root, of this plant is horizontal, woody, often a quarter of an inch in thickness. The branches are ascending, but a few inches high, round, and somewhat downy. Leaves scattered, near the extremities of the branches, evergreen, coriaceous, shining, oval, or obovate, acute at both ends, revolute at the edge, and furnished with a few small serratures, each terminating in a bristle. Flowers axillary, drooping, on round downy stalks. Outer calyx of two concave heart shaped leaflets, which may perhaps with more propriety be called bractes. Inner calyx monophyllous, white, cleft into five roundish subacute segments. Corolla white, urceolate, five angled, contracted at the mouth, the border divided into five short, reflexed segments. Filaments white, hairy, bent in a simicircular manner to accommodate themselves to the cavity between the

corolla and the germ. Anthers oblong, orange coloured, ending in two double horns, bursting outwardly, for their whole length above the filaments, and not opening by pores as in *Pyrola*. Pollen white. Germ roundish, depressed, five angled, resting on a reddish, ten toothed, glandular ring. Style erect, straight. Stigma simple, moist. The fruit is a small, five celled capsule, invested with the calyx, which becomes large, round, and fleshy, having the appearance of a bright scarlet berry.—Dry woods.—May and August.—Perennial.

The leaves have a well known agreeable spicy taste.

GAULTHERIA HISPIDULA. *Muhl.* *Creeping Gaultheria.*

Stem creeping, hispid; leaves roundish oval, acute, flowers solitary, axillary, subsessile, octandrous; corollas short-bell shaped.

Syn. VACCINIUM HISPIDULUM. Mx.

Stems creeping, filiform, woody, hispid with appressed bristles. Leaves evergreen, small, roundish oval, rather acute, with scattered hairs. Flowers solitary, on recurved peduncles, with two concave bractes. Calyx in four acute segments. Corolla campanulate, somewhat quadrangular, ending in four subacute segments.—A delicate evergreen growing close to the ground in old woods in various interior parts of the state.—May, June.

The taste of the leaves precisely resembles that of *G. procumbens*.

169. ARBUTUS.

ARBUTUS UVA URSI.

Bear Berry.

Stem procumbent; leaves entire. *L.*

Bigelow, Medical Botany, Pl. vi.

This is a shrubby plant, which trails upon the ground, putting out roots from the principal stems, and tending upward with the young shoots only. The cuticle is deciduous, and peels off from the old stems. Leaves scattered, obovate, acute at base, attached by short petioles, coriaceous, evergreen, glabrous, shining above, paler beneath, entire, the margin rounded, but scarcely reflexed, in the young ones pubescent. Flowers in a short cluster on the ends of the branches. Peduncles reflexed, fur-

nished at base with a short acute bracte underneath, and two minute ones at the sides. Calyx of five roundish segments, of a reddish colour and persistent. Corolla ovate or urceolate, white with a reddish tinge, transparent at base, contracted at the mouth, hairy inside, with five short reflexed segments. Stamens inserted at the base of the corolla with hairy filaments, and anthers with two horns and two pores in each. Germ round; style straight, longer than the stamens; stigma simple. Nectary a black indented ring, situated below the germ, and remaining till the fruit is ripe. Berries globular, depressed, of a deep red, approaching scarlet, containing an insipid mealy pulp, and about five seeds, which in the American plant cohere strongly together, so as to appear like the nucleus of a drupe.—On the summit of Blue hills, Milton, and elsewhere.—May, June.—Perennial.

The leaves are astringent and medicinal.

170. ANDROMEDA.

ANDROMEDA HYPNOIDES. L.

Mossy Andromeda.

Stems filiform, spreading; leaves acerose, crowded; peduncles solitary; flowers campanulate.

This truly delicate and beautiful Andromeda is a native of the northernmost regions of both continents. It grows on the summits of the White mountains of New-Hampshire, the only locality which to my knowledge it inhabits within the United States. The root and lower part of the stem are woody and firm. The branches numerous, filiform and spreading. Leaves very short, sessile, subulate, crowded so as to conceal the stem, evergreen. Peduncles solitary, from the ends of the branches, elongated, erect. Flower nodding. Calyx purplish, acute. Corolla bell shaped or hemispherical, half five cleft, purplish white. Fruit erect, globular, five valved, crowned with the style.—This is the smallest shrubby plant with which I am acquainted, and has the habit of a moss or smallest lycopodium.—June.

ANDROMEDA CALYCVLATA. L.

Dwarf Andromeda.

Racemes leaning one way, leafy; corollas subcylindrical; leaves alternate, lanceolate, obtuse, dotted.
L.

A low, evergreen, early flowering shrub. Leaves oblong, coriaceous, obsolete serrate, shining, and covered with white dots above, pale underneath. Flowers in terminal racemes, each flower proceeding generally from the axil of a small leaf, Calyx calyculated or double, the outer of two, the inner of five pale, acute leaves. Corolla ovate-cylindrical, white or purplish, the segments reflexed. Anthers brownish, two horned.—Milton, near Neponset river, and elsewhere.—April.

ANDROMEDA POLIFOLIA. *L.* *Water Andromeda.*

Leaves linear-lanceolate, revolute, white underneath; flowers aggregate, terminal, globose.

This most delicate shrub is found in wet bogs and at the edges of ponds. The leaves are very shortly petioled, lanceolate, strongly revolute at the edges, dark green, smooth and veined above, and of a pure, bluish white colour underneath. Flowers in nodding corymbs with white peduncles. Calyx short, white, its segments acute, tipped with red. Corolla nearly globular, with five angles, pale flesh colour. Stamens short, with brownish awned anthers. Germ globular, style straight.—In the edge of Richards' pond, Brookline.—June.

ANDROMEDA PANICULATA. *Mich.* *Panicled Andromeda.*

Racemes somewhat panicled; corollas depressed-globular, slightly pubescent; anthers short, ovate, obtuse, awnless. *Mich. abr.*

A pretty tall shrub. Leaves deciduous, ovate, mostly entire, somewhat downy. Racemes panicled. Flowers small, white, somewhat spherical, succeeded by globular capsules, which remain through the winter. This plant often bears a large, irregular, spongy excrescence of a yellow colour, the effect of disease.—Swamps.—June.

ANDROMEDA RACEMOSA. *L.* *Clustered Andromeda.*

Leaves oval-lanceolate, acute, serrulate, glabrous; racemes terminal, one ranked, elongated; calyx acute; corolla cylindrical.

The great regularity of the clusters of flowers in this species

causes them to resemble rows of teeth. Leaves on short petioles, thin, oval serrulate, acute or acuminate, smooth, the veins a little downy beneath. Flowers racemed, on the ends of the branches, all pointing downwards. Pedicels short, smooth. Bractes two, ovate, acuminate. Calyx of five acute segments, variously coloured. Corolla white, oblong-oval, contracted at the mouth; the segments convex, diverging or revolute. Style just exerted. Filaments converging. Anthers cleft, four awned. Capsule globular, splitting into five incurved valves and supported by the persistent bractes and calyx.—Low woods, Roxbury. Not common.—June.

171. RHODODENDRON.

RHODODENDRON MAXIMUM. *L.* *American Rose Bay.*

Bigelow, Medical Botany, Pl. li.

Leaves oblong, glabrous, paler beneath; umbels dense, terminal; corollas somewhat bell shaped, petals rounded.

A magnificent, flowering shrub, common in the mountainous regions of the middle states, but more rare toward the north. Several varieties of it are met with in different parts of the country. The Rhododendron of the northern states is a large, straggling shrub, very irregular in its mode of growth. The bark is of a greyish colour, cracked and broken. Leaves in tufts at the ends of the branches, evergreen, coriaceous, on round, fleshy petioles, oblong oval, entire, revolute at the edges, pale underneath. Both leaves and petioles, when young, are covered with a light woolly substance. The flowers form a terminal cluster or thyrus immediately above the leaves, the stalks and calyxes of which are covered with a glutinous pubescence. Previous to its expansion, the whole bud forms a large compound bud, resembling a strobilus or cone, each individual flower-bud being covered by a rhomboidal bracte, which falls off when the flower expands. Calyx small, of five unequal obtuse segments. Corolla monopetalous, funnel shaped, with a short tube, the border divided into five large, unequal segments, which are white shaded with lake, the upper and largest having a collection of orange coloured spots at its centre. Stamens declin-

ate, unequal; filaments white, thickened and hairy at base; anthers two celled, opening by two pores at top; pollen white. Germ ovate, hairy, glutinous; style declinate, equal to the longest stamens, thickened upwards; stigma a rough surface with five points. Capsule ovate, obtusely angular, five celled. Seeds numerous, minute.—In a swamp at Medfield, also near Portland.—July.

172. KALMIA.

KALMIA LATIFOLIA.

Mountain Laurel.

Bigelow, Medical Botany, Pl. xiii.

Leaves scattered, petioled, oval, and smooth; corymbs terminal, viscid, and pubescent.

A large and very ornamental shrub, sometimes attaining to the altitude of a small tree. Its leaves are evergreen, coriaceous, very smooth, with the under side somewhat palest. Their form is oval, acute, and entire; their insertion by scattered petioles, on the sides and extremities of the branches. The flowers vary from white to red; they grow in terminal corymbs, simple or compound with opposite branches, and made up of slender peduncles. These are invested with a glutinous pubescence, and supported at base by ovate, acuminate bracts. The calyx is small, five parted, persistent, with oval, acute segments. The corolla is monopetalous, with a cylindrical tube, a spreading disc, and an erect, five cleft margin. At the circumference of the disc, on the inside, are ten depressions or pits, accompanied with corresponding prominences on the outside. In these depressions the anthers are found lodged at the time when the flower expands. The stamens grow from the base of the corolla, and bend outwardly so as to lodge their anthers in the cells of the corolla. From this confinement they liberate themselves during the period of flowering and strike against the sides of the stigma. The germ is roundish, the style longer than the corolla and declined, the stigma obtuse. Capsule roundish, depressed, five celled and five valved, with numerous small seeds.—Woods, Gloucester, Princeton, &c. Not common nearer Boston.—June.

KALMIA ANGUSTIFOLIA. L.

Narrow leaved Laurel.

Leaves lanceolate; corymbs lateral. L.

A low shrub with rose coloured flowers, very common in low

grounds, and known by the names *sheep poison*, *lambkill*, *low laurel*, &c. Leaves on short petioles, scattered or in threes, lanceolate, obtuse, smooth, evergreen. Flowers in lateral corymbs, proceeding from the axils of the leaves, and forming a sort of whorl round the stem.—June.

KALMIA GLAUCA. L.

Glaucous Kalmia.

Branches ancipital; leaves opposite, subsessile, lanceolate, revolute at the margin, glaucous underneath; corymbs terminal, with smooth stalks.

A small shrub of northern bogs and mountains. The young branches are two edged. Leaves opposite, lanceolate, revolute at the margin, white underneath. Corymbs terminal. Peduncles filiform, each issuing from a pair of concave, obtuse, smooth bractes. Segments of the calyx ovate, obtuse, reddish with a white margin. Corolla purple with five lobes and ten depressions. Anthers oblong, blackish. Style longer than the stamens.—Keene, New-Hampshire; on the White mountains, &c.—June.

173. PODALYRIA.

PODALYRIA TINCTORIA. Willd.

Wild Indigo.

Glabrous; stipules setaceous; leaves subsessile; leaflets wedge-obovate; flowers in terminal spikes.
Mich. abr.

Syn. SOPHORA TINCTORIA. L.

BAPTISIA TINCTORIA. Nutt.

A very common, bushy plant, found in woods and dry soils. Stem smooth, very much branched. Leaves in threes on a short petiole; leaflets rounded at the end, and tapering to an acute base. Stipules very small, caducous. Flowers in a loose spike, on slender peduncles, yellow; banner rather shorter than the wings and keel. Legumes short, rounded, of a bluish cast.—August.—Perennial.

For the medicinal properties of this plant, see Dr. Thatcher's Dispensatory.

174. CASSIA.

CASSIA CHAMÆCRISTA. *L.**Dwarf Cassia.*

Leaves in many pairs; petiole with a pedicelled gland; stipules ensiform. *L.*

Leaves pinnate, with ten or a dozen pair of leaflets; the petiole with a small gland supported on a footstalk near its base. Flowers often in pairs, near the stem, yellow, two of the petals spotted at base. Like others of its family it shuts its leaves at night, or after an injury.—Road sides.—August.—Annual.

CASSIA MARILANDICA.

American Senna.

Bigelow, Medical Botany, Pl. xxxix.

Leaflets in eight or nine pairs, oblong-lanceolate, mucronate; an obovate gland on the petiole; racemes axillary and terminal; legumes linear and curved.

The stems, which grow in bunches and often attain the height of five or six feet, are round, striated, and invested with a few scattered hairs. Petioles compressed, channelled above, bearing from eight to ten pairs of leaflets, which are oblong, smooth, somewhat hairy at the edges, pale on the under side, supported by short, crooked pedicels, and mucronated with a rigid bristle at the end. On the base of the petiole is a large obovate pedicelled gland, of a shining green, terminating in a dark point at top, which is sometimes double. Each petiole is also furnished with a pair of linear-subulate, ciliate, deciduous stipules. The flowers grow in axillary racemes, extending quite to the top of the stem. The peduncles are slightly furrowed, pedicels supported by bractes like the stipules, and marked with minute, blackish, glandular hairs. Leaves of the calyx yellow, oval, obtuse, the lateral ones longest. Petals five, bright yellow, spatulate, concave, very obtuse, three ascending and two descending. Stamens ten with yellow filaments and brown anthers. The three upper have short abortive anthers; to these succeed two pairs of deflexed linear anthers; the remaining three or lower-most are much longer, crooked, and taper into a sort of beak, the middle one being shortest. The anthers open by a terminal pore. Germ descending with the lower stamens, hairy. Style ascending, stigma hairy, moist. The fruit consists of long le-

gumes, which are pendulous linear, curved, swelling at the seeds, and furnished with slight hairs.—Banks of Quinebaug river, Massachusetts.—July, August.—The root resembles Senna in its medicinal properties.

175. RHODORA.

RHODORA CANADENSIS. L.

Canadian Rhodora.

A small shrub with beautiful purple flowers on the tops of the branches, which appear in the spring before the leaves are perfectly expanded. Its height is one or two feet. Leaves alternate, oval, mostly entire, pubescent and glaucous underneath. The flowers are in umbels on the ends of the twigs. The corolla consists of three unequal petals, the largest of which is broad, and divided into three segments or lobes at the end, the other two are equal, lanceolate, and obtuse. Stamens unequal, curved, purple, with small anthers. Germ pubescent. Style purple, longer than the stamens.—Low grounds.—Malden, Cambridge.—May. In the *Notch* of the White mountains, June.

176. LEDUM.

LEDUM LATIFOLIUM.

Labrador Tea.

Leaves linear-oblong; folded under at the margin, woolly underneath; stamens as long as the petals.

A low shrub, of our northern mountains and bogs. The youngest part of the stem is green and woolly. Leaves on short woolly petioles, lanceolate, strongly revolute at the sides, smooth above, covered with thick reddish wool underneath. Flowers in terminal corymbs with slender peduncles. Bractes obovate concave, covered with shining resinous dots, as are the peduncles and germ. Calyx minute with five obtuse teeth. Petals five, oblong, obtuse, white. Stamens from five to ten, as long as the petals. Germ oval; style as long as the stamens, a little declined.—On the Monadnock, White mountains, &c.—July.—The leaves are astringent and are said to have been used as a substitute for tea.

177. CLETHRA.

CLETHRA ALNIFOLIA. L.

Alder leaved Clethra.

Leaves obovate, serrate, pubescent underneath; racemes simple, bracted. *Willd.*

A tall, elegant, white flowering shrub. Leaves about three inches long, and from one to two broad, inversely ovate, serrate, downy underneath in one variety, glabrous in another. Flowers in long racemes or loose spikes with downy stalks. Bractes linear-subulate. Calyx greenish white; petals roundish oblong; stigma trifid.—Grows in low soils, Cambridgeport.—July, August.

178. PYROLA.

§ *Subgenus* ————. *Stamens ascending, style declined, stigma annular.*

PYROLA ROTUNDIFOLIA. L. Round leaved Winter green.

Leaves prolate-orbicular, flowers racemed, calyx reflexed, style declined.

A very common species. Root creeping, putting up erect or ascending, angular stems. Leaves spreading near the ground, petioled, roundish ovate and obovate, subacute, scarcely serrate, much larger than in the following species. Scape angular, with one or more sheathing scales. Flowers in a large terminal raceme with nodding pedicels, white, fragrant. Calyx segments ovate with the points reflexed. Stamens tending to the upper side, and styles to the lower; stigma truncately-conical surrounded with a ring at base, persistent.—Common in Woods.—June.

PYROLA ASARIFOLIA. Mx. Broad leaved Winter green.

Leaves oblate-orbicular, flowers racemed, calyx appressed, style declined.

Syn. PYROLA CHLORANTHA. Nuttall?

This species is in flower two or three weeks earlier than the last, and has leaves which are broader in proportion to their length, but scarcely half as large. Primary leaves reniform, sometimes obcordate, sometimes orbicular, obtuse, dark green and coriaceous. Scape more slender and fewer flowered than in the last. Flowers greenish with the segments of the calyx short and appressed. Stamens, style, and stigma much as in the last.—Dry woods, less common than the last.—June.

§§ *Subgenus* ————. *Stamens spreading, style straight, stigma peltate.*

PYROLA SECUNDA. L.

One sided Winter green.

Flowers racemed, leaning one way. L.

Less frequent than the former, but resembling it in habit. Stem as in the last. Leaves petioled, spreading, ovate, acute, (not obtuse like the last,) minutely serrate, smooth. The flowers all tend to one side of the stem, whence the name. Stamens equal and uniform; style straight, permanent.—Woods.—June.

PYROLA UNIFLORA. L.

One flowered Pyrola.

Leaves suborbiculate, serrate; scape one flowered, style straight.

A small and very delicate plant. Leaves nearly orbicular, petioled, smooth, crenate. Scape round, short, invested at base with a few roundish concave scales or bractes, supporting a single large fragrant flower. Calyx segments oblong, obtuse. Petals obtuse, white. Style short, straight, stigma large, peltate, five rayed.

I have only met with this interesting species in a wood at Keene, N. H.—Mr. Oakes has sent it from Lynn.—June.

§§§ *Subgenus CHIMAPHILA. Stamens spreading, style imbedded, stigma peltate.*

PYROLA UMBELLATA. L.

Umbelled Winter green.

Bigelow, Medical Botany, Pl. xxi.

Leaves wedge shaped and toothed, flowers somewhat umbelled, calyx five toothed, style immersed.

Syn. CHIMAPHILA CORYMBOSA. Pursh.

A very common and handsome species. Root woody, creeping, sending up stems at various distances. The stems are ascending, somewhat angular, and marked with the scars of the former leaves. The leaves grow in irregular whorls, of which there are from one to four. They are evergreen, coriaceous, on very short petioles, wedge shaped, subacute, serrate, smooth, shining, the lower surface somewhat paler. The flowers grow in a small corymb, on nodding peduncles, which are furnished with linear bractes about their middle. Calyx of five roundish subacute teeth or segments, much shorter than the corolla. Pe-

tals five, roundish, concave, spreading, cream coloured, with a tinge of purple at base. Stamens ten. Filaments sigmoid, the lower half fleshy, triangular, dilated, and slightly pubescent at the edges; the upper half filiform. Anthers two celled, each cell opening by a short, round, tubular orifice, which points downward in the bud, but upward in the flower. Pollen white. Germ roundish, depressed, furrowed, obscurely five lobed, with a funnel shaped cavity at top. Style straight, half as long as the germ, inversely conical, inserted in the cavity of the germ, and concealed by the stigma. Stigma large, peltate, convex, moist, obscurely five rayed. Capsules erect, depressed, five celled, five valved, the partitions from the middle of the valves. Seeds linear, chaffy, very numerous and minute.—Dry woods.—June and July.

PYROLA MACULATA. L.

Spotted Pyrola.

Leaves lanceolate, rounded at base, remotely serrate, marked with a longitudinal stripe; scape two or three flowered; filaments woolly.

Syn. CHIMAPHILA MACULATA. Pursh.

A beautiful plant, abundantly distinguished from the other species by its variegated leaves. The stalk divides at top into two or three nodding incrassated peduncles, each furnished with a small subulate bracte near its middle, and bearing a single flower. Calyx five leaved, the leaves ovate, rather obtuse, finely ciliate, overlaying each other at base. Petals five, white, oblong, obtuse, contracted at base, reflexed. Filaments sigmoid, the lower half fleshy, angular, and covered with thick hair. Anthers two celled, opening by two tubular orifices. Germ roundish, depressed, furrowed. Style short, thick, inversely conical, about two thirds exerted. Stigma very large, convex, obscurely five lobed.—Woods, near Newton upper falls, rare.—On Mount Holyoke, Northampton.—July.

179. MONOTROPA.

MONOTROPA UNIFLORA. Common Monotropa. Tobacco pipe.

Stem erect, single flowered.

The whole plant is of a clear white, turning black at the tips

as it decays. Stem erect, fleshy, glabrous. Leave scattered, sessile, lanceolate, semitransparent. Flower large, solitary, terminal, drooping, afterwards erect. Petals five, wedge shaped, concave, gibbous at base with a corresponding nectariferous cavity within, glabrous externally, a little downy on the inside. Stamens ten, those which are alternate with the petals longest. Filaments bearded. Anthers consisting of two horizontal folds, cloven outwardly. Between the filaments are ten short, reversed horns extending from the base of the germ downward by pairs into the five nectaries. Germ large, ovate-globular, with ten ridges between the filaments which unite in pairs at the top. Style, if any, short, inversely conical. Stigma funnel shaped, somewhat five angled, glutinous at the edge. Capsule erect, five valved.—Woods.—July.

On mature examination I am induced to consider the species with drooping flowers, and that with erect flowers, called *M. morisoniana* by Michaux, to be the same plant. It is not uncommon to find erect and drooping flowers in the same bunch.

§ *Subgenus* HYPOPITHYS. *Bractes calyciform, styles cylindric.*

MONOTROPA LAUNGINOSA. *Mx.*

Pine sap.

Flowers spiked ; bractes and flowers woolly.

Syn. HYPOPITHYS LAUNGINOSA. Nutt.

A white plant like the last, extremely similar in its habit and fructification, though by some made a distinct genus. The root in this plant and the last consists of a mass of agglomerated brownish fibres, said to be parasitic on the roots of trees. The lower part of the stem, which is under ground, is turgid and covered with closely imbricated rhomboidal scales. The part above ground is furnished with more remote, scattered, oblong, concave scales, the uppermost of which become bractes to the flowers, and are by some considered as a calyx, giving rise to a generic distinction. The stem and scales are pubescent below and somewhat woolly at top. Flowers in a terminal raceme, which is drooping in the young plant, but afterwards becomes erect. It is generally simple, though I have found specimens in which it was compound with several branches. Outer petals of the flower spatulate, rounded at the end, gibbous at base with a nectariferous cavity within. Their number is four, and in the

terminal one four or five. Inner petals alternating with these, but part of them usually wanting, lanceolate, acute. Stamens about eight. Germ ovate furrowed, style straight, as long as the germ, stigma peltate, concave. From the base of the germ are horns reversed by pairs into the nectaries.—Woods.—July.

DIGYNIA.

180. SCLERANTHUS.

SCLERANTHUS ANNUUS. *L.* *Common Knawel.*

Calyx of the ripe fruit with sharp, spreading teeth; stems spreading. *Sm.*

A small, obscure plant in gravelly soils, road sides, &c. Stems spreading, decumbent, short. Leaves linear, acute, short, opposite. Flowers green, sessile, in terminal, leafy clusters. Calyx with five acute, spreading, permanent segments. Stamens from five to ten.—July.—Annual.

181. SAXIFRAGA.

SAXIFRAGA VERNALIS. *Willd.* *Early Saxifrage.*

Pubescent; leaves oval, somewhat petioled, crenate; flowers erect, paniced, nearly sessile, alternate.

Syn. SAXIFRAGA VIRGINIENSIS. Mich.

One of the earliest flowers upon rocks and dry hills. Leaves mostly radical, spreading, fleshy, elliptical, a little pubescent, crenate or serrate, and tapering into a broad petiole. Stem erect, fleshy, hairy, nearly destitute of leaves. Flowers numerous, crowded, white, arranged in corymbs on the ends of the branches, which, collectively, form a sort of panicle.—April, May.—Perennial.

SAXIFRAGA PENNSYLVANICA. *L.* *Pennsylvanian Saxifrage.*

Leaves oblong-lanceolate, a little hairy, denticulate; stem naked; peduncles alternate, forming corymbed heads. *Willd.*

A tall, green plant, of little beauty, growing in meadows. Leaves all radical, many times larger than in the preceding species, oblong, approaching to oval, very slightly toothed

Stems large, erect, rank in their growth, hollow, hairy, bearing heads of small, green flowers, disposed in a sort of panicle; calyx segments ovate, acute, reflexed; petals linear reflexed. The root is extremely astringent.—May.—Perennial.

182. TIARELLA.

TIARELLA CORDIFOLIA. L.

Common Tiarella.

Leaves cordate, lobed and toothed, teeth mucronate, scape racemed.

Root creeping and sending out runners. Leaves on long hairy petioles, heart shaped, lobed and toothed, hairy on both sides. Scape round, hairy, often furnished with a leaf. Flowers entirely white in a long raceme, with very minute subulate bractes. Segments of the calyx oblong, obtuse. Petals lanceolate, acute, clawed. Filaments longer than the corolla, anthers orange. Germ oval, tapering into two acute unequal styles, which are so closed together as to appear like one. Capsule two valved, the lower valve much the longest, acute, and concave upward, with the upper valve shutting into its cavity. Seeds obovate, smooth, fixed to the sides.—Woods in the interior of the state. At Keene, New-Hampshire.—June.

183. MITELLA.

MITELLA DIPHYLLA. L.

Common Mitella.

Leaves lobate-angular, toothed; stem erect with a pair of opposite leaves near the top.

Root leaves on long bristly petioles, heart shaped, lobed, and toothed, covered with scattered bristles. Stem erect, round, bristly, with generally a pair of opposite, ovate cut and toothed leaves half way up. Flowers in a long terminal spike with short peduncles. Calyx hemispherical, with short, acute segments. Petals five, white, beautifully pinnatifid or pectinate, inserted on the calyx between its segments. Stamens ten, short, converging. Styles two, short, diverging. Capsule compressed, of two equal semiorbicular valves tipped with the styles. Seeds black, obovate, acute at base.—Woods, Windsor, Vermont, at the foot of Ascutney mountain.—June.—Perennial.

MITELLA PROSTRATA. *Mx.**Trailing Mitella.*

Root creeping; stems prostrate; leaves alternate, roundish cordate, subacute, with slight obtuse lobes.

A small, delicate creeping species. Stems prostrate. Leaves small, on slender hairy petioles, reniform and heart shaped, doubly crenate as in *Hydrocotyle Americana*. Scape filiform, hairy, with a thin raceme, of few flowers. Calyx acute. Petals pinnatifid.—In Barre, Vermont. Sent by Dr. Paddock.—June.

184. SAPONARIA.

SAPONARIA OFFICINALIS. *L.**Soap Wort.*

Calyxes cylindrical, leaves ovate-lanceolate.

A foot or more high, with opposite leaves and numerous flowers resembling pinks with entire petals.—Road sides, naturalized.—July, August.—Perennial.

185. DIANTHUS.

DIANTHUS ARMERIA. *L.**Wild Pink.*

Flowers aggregate, fascicled; scales of the calyx lanceolate, villous, equal to the tube. *Sm.*

This small species of pink has a leafy, pubescent stem, ending in erect branches. Leaves opposite, linear-lanceolate, entire, pubescent, the lower ones spatulate. Flowers terminal, in bunches, erect, scentless, ephemeral. Calyx equalling the tube of the corolla; petals small, red, with white dots, a little toothed.—On the rocky hills in Roxbury and Salem.—July.—Annual.

TRIGYNIA.

186. ARENARIA.

ARENARIA RUBRA. *L.**Common Sandwort.*

Leaves linear, slightly mucronate, stipules membranous, sheathing; seeds compressed, angular, roughish. *Sm.*

A spreading plant, with small, delicate, red flowers. Stems prostrate, slender, smooth, pointed, branching. Leaves small, narrow, ending in a short bristle. Stipules surrounding the stem,

whitish, dry. Flower stalks and calyx hairy. Petals small, not exceeding the calyx.—Pastures and road sides.—June, July.

ARENARIA MARINA. Sm.

Sea Sandwort.

Leaves semicylindrical, fleshy, awnless; stipules scarious, sheathing; seeds compressed, margin glabrous.
Sm.

Syn. ARENARIA CANADENSIS. Pers.

A more succulent, fleshy plant than the last. Stems prostrate or decumbent, smooth. Leaves short, fleshy, roundish, not ending in a bristle. Flowers pale red, expanded as well as the last in clear weather, and closed in foul.—Salt marshes.—July.—By some this is considered a variety of the last.

ARENARIA STRICTA. Mx.

Straight Arenaria.

Glabrous, erect, many stemmed; leaves linear subulate; flowers paniced, calyx segments lance-ovate, acute, striate, much shorter than the petals.

Stems filiform, erect, jointed. Leaves linear, sessile, with a tuft in each axil. Branches of the panicle opposite, bracted, elongated. Calyx very acute, five nerved. Petals oblong, obtuse, longer than the calyx.—On the borders of Lake Champlain; gathered by Mr. Boott.—Perennial.

ARENARIA GLABRA. Mx.

Mountain Arenaria.

Glabrous, with crowded filiform stems; leaves linear-subulate, spreading, flat; pedicels elongated, one flowered; calyx leaves oval, obtuse, smooth.

This plant differs from the preceding in its smaller height, fewer leaves, and obtuse smooth calyx. Stems crowded so as to cover the ground with tufts of flowers, smooth, filiform. Leaves shorter, and without the axillary tufts of the last species, connate, linear, shining. Flowers large, white. Segments of the calyx gibbous at base, ovate, obtuse. Petals twice as long as the calyx emarginate, white. Stamens yellow. Germ ovate. Styles three.—On the summits of the White mountains, abundant.—August.—Perennial.

ARENARIA SERPYLLIFOLIA. L. Thyme leaved Arenaria.

Stem dichotomous; leaves ovate, acute, subciliate, calyx acute; petals shorter than the calyx.

Stems numerous, procumbent, downy. Leaves often closely sessile, very acute, about three nerved. Flowers axillary. Calyx leaves three nerved, acute.—Road sides; naturalized.—June.—Annual.

ARENARIA LATERIFLORA. L. Side flowering Sandwort.

Leaves ovate, obtuse; peduncles lateral, two flowered. *L.*

A slender, delicate species, with white flowers. Stem erect, with hairy veins, filiform, from four to ten inches high. Leaves opposite, oval, smooth, nearly sessile. Peduncles or flowering branches axillary, very slender, divided about half way, their fork furnished with two minute leaflets. Each part of the fork bears a flower.—In wet, shady places.—June.—Perennial.

ARENARIA PEPLOIDES. L. Beach Arenaria.

Stem dichotomous, fleshy, leaves ovate, acute, fleshy.

This plant grows on sandy beaches in various parts of the sea coast, particularly at Plumb island, near Newburyport, where it forms large crowded tufts resembling islets. Stems as large as small quills, smooth, fleshy, pellucid, furrowed on opposite sides. Leaves opposite, half clasping, ovate, entire, acute, fleshy, smooth, the veins only discoverable by their transparency. Branches few, sometimes dichotomous. Flowers axillary, nearly sessile. Calyx erect, the segments fleshy, nerveless, subacute. Petals white, membranous, spatulate. Stamens as long as the calyx, anthers roundish. Germ ovate, styles short. A fifth part of the fructification is wanting in some of the flowers.—May, June.—Perennial.

187. STELLARIA.

STELLARIA MEDIA. Sm. Chickweed.

Leaves ovate, stems procumbent, with an alternate, lateral, hairy line. *Sm.*

Syn. *ALSINE MEDIA*. L.

Chickweed grows in almost every situation, even between the bricks in the side walks. Its spreading stems are remarkable for a hairy line extending from joint to joint, and occupying the two sides alternately. On breaking the stem an elastic, fibrous substance is drawn out, which retracts when liberated. Leaves opposite, ovate, petioled, entire. Peduncles axillary and terminal, one flowered. Petals white, deeply cleft, so as to appear ten in number. Stamens three, five, or ten. Capsules opening into six segments.—Flowers from the beginning of spring to the end of fall.—Annual.

STELLARIA LONGIFOLIA. *Muhl.*

Stichwort.

Leaves linear, entire; panicle terminal, spreading, capillary; calyx three nerved, about equal to the petals. *Sm.*

Syn. *STELLARIA GRAMINEA*. 1st edit.

A small, starry, white flower. Stems decumbent, square, compressed, smooth, very slender. Leaves linear-lanceolate or nearly linear, tapering to a point, opposite, smooth. Segments of the calyx three ribbed, lanceolate acute, as long as the petals. Petals appearing in ten white, fine segments, like those of *Stellaria media*.—Grows among the bushes on Craigie's road.—June, July.—Closely allied to *S. graminea* of Europe, and perhaps only a narrow leaved variety.

**STELLARIA BOREALIS*

Northern Stellaria.

S. foliis ovali-lanceolatis; pedunculis axillaribus, elongatis, unifloris; petalis calyci subæqualibus.

Leaves oval-lanceolate, peduncles axillary, elongated, one flowered; petals about equal to the calyx.

Stem spreading, angular, dichotomous. Leaves slightly connate, oblong-lanceolate, acute, nerveless. Peduncles solitary, axillary, elongated, angular. Segments of the calyx five, ovate, acute, nerveless. Petals white, deeply cloven. Stamens ten, alternately longer and shorter. Anthers roundish. Germ ovate; styles three. Capsule oblong-ovate, one celled, many seeded.

This plant generally occurs without petals, in which state I discovered it on the White mountains in July, 1816. I have since received it several times from the same place but always in the apetalous state, until the last year, when Messrs. Greene and Little found it there in August with complete flowers.

188. SILENE.

SILENE PENNSYLVANICA. *Mich.**Catchfly.*

Viscid-pubescent; root leaves wedge form, stem leaves lanceolate; partial stems few flowered; petals slightly emarginate, subcrenate. *Mich.*

Sometimes called *wild pink*, from its similarity in habit to some of that genus. Leaves of the root spatulate, acute at top, and tapering into a long base; those of the stem lanceolate, opposite. Flowers in upright, terminal bunches. Calyxes nearly cylindrical, hairy, and exceedingly glutinous. Corollas purplish white; petals wedge shaped, entire or slightly crenate.—Found in dry, sandy soils.—June.

SILENE ANTIRRHINA. *L.**Snapdragon Catchfly.*

Leaves lanceolate, subciliate; peduncles trifid; petals emarginate, calyx ovate.

A slender, tall species which in the day appears destitute of flowers. Stem smooth, erect, a foot high. Leaves opposite, lanceolate, subciliate at base, dotted under a magnifier. Panicle forked, with intermediate flowers. Calyx ovate. Corolla probably nocturnal. I have never found it expanded by day.—Dry road sides.—July.—Annual.

189. CUCUBALUS.

CUCUBALUS BEHEN. *L.**Bladder Campion.*

Calyx nearly globular, smooth, reticulated with veins; leaves ovate-lanceolate, glaucous, smooth. *Sm. Engl. Bot.*

Syn. SILENE INFLATA. Sm. Flor. Brit.

The inflated, bladder-like calyx at once distinguishes this plant from every thing about it. Radical leaves spatulate, stem leaves opposite, ovate, acute, entire. Stems one or two feet

high, smooth, paniced. Flowers nodding. Calyx oblong-spherical, thin, elegantly veined. Petals white, spreading, bifid.—About fences and waysides.—July.—Perennial.

CUCUBALUS STELLATUS. *L.* *Star Campion.*

Pubescent, erect; leaves in whorls of four, oval-lanceolate, acuminate.

Petals white, about four cleft.—Woods, Connecticut.—July.—Perennial.

PENTAGYNIA.

190. PENTHORUM.

PENTHORUM SEDOIDES. *L.* *Penthorum.*

The only species of its genus. Stem about a foot high, angular. Leaves alternate lance-oval, serrate, acute, green on both sides. Flowers terminal, in a few revolute spikes, of a greenish yellow. Capsule with five beaks at top.—Wet ground, brook sides, &c.—July.—Perennial.

191. CERASTIUM.

CERASTIUM VULGATUM. *L.* *Mouse Ear Chickweed.*

Hairy, viscid, forming tufts; leaves ovate; petals equal to the calyx; flowers longer than their stalks. *Sm.*

Stems spreading, round, dichotomous. Leaves ovate, opposite. Flowers from the forks of the stem, crowded at the ends, on peduncles shorter than themselves. Petals oblong, white, a little longer than the calyx.—In cultivated ground.—May.—Annual.

CERASTIUM VISCOSUM. *L.* *Viscid Cerastium.*

Hairy, viscid, diffuse; leaves lanceolate-oblong.

In dry fields, &c. Introduced.—May, &c.

CERASTIUM SEMIDECANDRUM. *L.* *Small Cerastium.*

Hairy, viscid, flowers pentandrous, petals emarginate.

A small species, sometimes of a reddish cast.—Sandy soils.—Introduced.—May.

CERASTIUM ARVENSE. *L.* *Field Chickweed.*

Leaves linear-lanceolate, obtuse, ciliate at base, petals twice as long as the calyx.

Flowers large, white. Naturalized in the same situations as the others.—May—August.

CERASTIUM TENUIFOLIUM? Pursh. *Narrow leaved Cerastium.*

Pubescent, cæspitose; leaves linear, mostly longer than the internodes; petals obovate emarginate, three times as long as the calyx.

Stems round, hairy, ascending. Leaves narrow-lanceolate, tapering upwards, subacute, pubescent, the lower ones longer than the internodes. Segments of the calyx acute, hardly nerved. Petals not very deeply cleft.—On the precipice, near Bel lows' falls, New-Hampshire.—June.

192. SPERGULA.

SPERGULA ARVENSIS. L.

Corn Spurrey.

Leaves whorled; stalks of the fruit reflexed; seeds kidney shaped, angular, rough. *Sm.*

A weed in corn fields, by many of our farmers denominated *tares*. Stems spreading, becoming erect, smooth, round, swelling at the joints. Leaves linear, obtuse, in whorls at the joints. Panicle terminal, forked, the peduncles bent downward as the fruit ripens. Petals little larger than the calyx, white.—June and after.—Annual.

DECAGYNIA.

193. PHYTOLACCA.

Bigelow, Medical Botany, Pl. iii.

PHYTOLACCA DECANDRA. L.

Poke.

Leaves ovate, acute at both ends; flowers with ten stamens, and ten styles.

A common plant, known also by the names of *Garget*, *Cocum*, *Jalap*, &c. The root is of large size, frequently exceeding a man's leg in thickness; and is usually divided into two or three principal branches. Its substance is fleshy and fibrous, and easily cut or broken. Internally it is distinctly marked with concentric rings of considerable thickness, while its outer surface is covered with a very thin, brownish bark, which seems to be

little more than a cuticle. The stalks, which are annual, frequently grow to the height of six, and even nine feet. They are round, smooth, and very much branched. When young their usual colour is green, but in most plants, after the berries have ripened, they are of a fine purple. Leaves scattered, petioled, ovate-oblong, smooth on both sides, ribbed underneath, entire, acute. The flowers grow in long pedunculated racemes opposite to leaves. Peduncles nearly smooth, angular, ascending. Pedicels divaricated, sometimes branched, green, white or purple, furnished with a small linear bracte at base, and two others in the middle. Calyx none. Corolla resembling a calyx, whitish, consisting of five round-ovate, concave, incurving petals. Stamens ten, rather shorter than the petals, with white, roundish, two lobed anthers. Germ greenish, round, depressed, ten furrowed. Styles ten, short, recurved. The flowers are succeeded by long clusters of dark purple berries, almost black, depressed or flattened, and marked with ten furrows on the sides.—Road sides.—July, August.—Perennial.

The root is a violent emetic.

Class XI. DODECANDRIA. *Twelve stamens.*

Order I. MONOGYNIA. *One style.*

194. ASARUM. Calyx three cleft, superior; corolla none; capsule six celled.

195. PORTULACA. Calyx two cleft; corolla five petalled; capsule one celled, opening transversely.

196. LYTHRUM. Calyx twelve toothed; petals six, inserted into the calyx; capsule two celled, many seeded.

Order II. DIGYNIA. *Two styles.*

197. AGRIMONIA. Calyx five toothed, invested with an outer one; petals five, inserted in the calyx; seeds two in the bottom of the calyx.

Order III. *TRIGYNIA*. Three styles.

193. *EUPHORBIA*. Calyx inflated, inferior; petals or nectaries four or five, standing on the calyx; capsule three lobed, supported by a pedicel.

DODECANDRIA.
MONOGYNIA.194. *ASARUM*.*ASARUM CANADENSE*. *L.**Wild Ginger.*

Bigelow, Medical Botany, Pl. xv.

Leaves two, reniform; calyx woolly, cleft to the base; its segments spreading at top.

A low plant with two leaves and an axillary flower growing close to the ground. The root is creeping, fleshy, and somewhat jointed. Leaves kidney shaped, pubescent on both sides, with long, round, hairy petioles. Flower solitary, growing from the fork of the stem on a pendulous, hairy peduncle, and sometimes nearly buried in the ground. Calyx very hairy or woolly, consisting of three broad, concave leaflets, which are mostly of a brownish or dull purple on the inside at top and bottom, and terminated by a long, spreading, inflected point, with reflexed sides. The colour varies greatly, according to the amount of light which the plant enjoys, being sometimes nearly green. Stamens twelve, inserted on the germ at a distance from the calyx, the alternate ones longer. Anthers growing to the filaments below their extremity. Near the divisions of the calyx are three short, curved, filamentary substances, which may perhaps be called nectaries. Germ inferior, somewhat hexagonal, marked at top inside, with a dark red line; style conical, striate, parted at top into six recurved, radiating stigmas.—Dry woods, in the western and northern parts of the state.—May to July.—Perennial.

The root has an agreeable, aromatic flavour, not unlike that of ginger.

195. PORTULACA.

PORTULACA OLERACEA. *L.**Purslane.*

Leaves wedge shaped ; flowers sessile. *L.*

A succulent, annual plant, common in gardens, cultivated fields, and waste grounds. Stems procumbent, spreading, smooth, fleshy. Leaves wedge shaped, rounded at the end, fleshy, smooth, sessile. Flowers sessile, scattered, yellow. Capsule opening transversely. Flowers all summer.—Annual.

196. LYTHRUM.

LYTHRUM VERTICILLATUM. *L.**Grass Poly.*

Leaves opposite or ternate, lanceolate, petioled ; flowers axillary, forming a sort of whorls.

Stems woody at base, two feet high. Leaves opposite or in threes, lanceolate, entire. Flowers on axillary, subdivided peduncles, nearly surrounding the stem. Calyx ending in ten or twelve teeth, accompanied by the same number of long stamens. Petals five or six, of a fine purple, spreading, inserted on the calyx, short in duration.—In watery places near Fresh pond.—July, August.

LYTHRUM HYSSOPIFOLIUM. *L.**Dwarf Grass Poly.*

Leaves alternate, linear lanceolate ; flowers axillary, solitary, hexandrous.

Stem slender, six to ten inches high, square, with spreading branches, which are mostly opposite, at base. Leaves linear oblong, obtuse, sessile, the lower ones deciduous. Flowers small, axillary, sessile, appressed to the stalk, with three minute bractes. Calyx subcylindrical, angular, with twelve minute segments, the alternate ones longer. Corolla small, purple. Stamens commonly six, rarely five.—In low grounds and dried ponds.—August, September.—Annual.

This plant was returned to me by the late Dr. Muhlenberg as *L. lineare* of Michaux. Are the two plants different ?

DIGYNIA.

197. AGRIMONIA.

AGRIMONIA EUPATORIA. *L.**Agrimony.*

Stem leaves pinnate, the odd one petioled, fruit hispid. *L.*

Rises to the height of two feet, with an angular, hairy stem. Leaves interruptedly pinnate, hairy. Leaflets ovate, serrate, all sessile except the terminal one. Stipules large, semicircular, cut-serrate. Spike long, erect, hairy. Flowers thinly scattered, on short stalks, yellow. Calyx persistent, armed with hooked bristles. The plant is astringent and tonic.—By fences and thickets.—June, July.—Perennial.

TRIGYNIA.

198. EUPHORBIA.

EUPHORBIA HELIOSCOPIA. *L.**Sun Spurge.*

Umbel five rayed, then three rayed and forked ; involucels obovate ; leaves wedge form, serrate. *L.*

A weed in rich ground, lactescent, as are the other species. Stem upright, round. Leaves scattered, obovate, or wedge shaped, slightly serrate at the end. Umbel of five rays, supported by a large involucre like the leaves. Rays branching, first into three, then into two divisions. Capsules smooth.—Annual.

EUPHORBIA POLYGONIFOLIA. *L.**Knot Grass Spurge.*

Leaves opposite, quite entire, lanceolate, obtuse ; flowers solitary, axillary ; stems procumbent. *L.*

A flat spreading plant, abounding with milky juice. Stems smooth, dichotomous. Leaves opposite, oblong, linear-lanceolate, blunt, nearly sessile. Flowers small, proceeding from the divisions of the stem.—In sandy places, near the sea shore.—June, July.—Annual.

EUPHORBIA MACULATA. *L.**Spotted Spurge.*

Leaves serrate, oblong, hairy ; flowers axillary, solitary ; branches spreading.

A flat plant like the last. Stems spreading close to the ground.

Leaves oblong, obtuse, obscurely serrulate on the upper part, edged with hairs, and frequently with a dark spot in the centre. Flowers very small, capsule hairy.—Found in sandy soils.—June, July.—Annual.

EUPHORBIA HYPERICIFOLIA.

Oval leaved Spurge.

Smooth, branching, erect and spreading; branches divaricate; leaves opposite, serrate, oval-oblong, sub-falcate; corymbs terminal.

Larger than the last. Leaves unequally ovate-oblong.—In rich grounds.—July, &c.—Annual.



Class XII. ICOSANDRIA. *Twenty or more stamens, inserted on the calyx.*

Order I. MONOGYNIA. *One style.*

199. PRUNUS. Calyx inferior, five cleft; corolla five petalled; drupe with a smooth or slightly seamed stone.

Order II. DIGYNIA. *Two styles.*

200. CRATÆGUS. Calyx superior, five cleft; petals five; berry two seeded.

Order III. TRIGYNIA. *Three styles.*

201. SORBUS. Calyx superior, five cleft; petals five; berry three seeded.

Order IV. PENTAGYNIA. *Five styles.*

202. PYRUS. Calyx superior, five cleft; corolla five petalled; pome five celled; cells two seeded.

203. SPIRÆA. Calyx inferior, five cleft; corolla five petalled; capsules two valved, many seeded.

Order V. *POLYGYNIA*. Many styles.

204. *ROSA*. Calyx urn-shaped, fleshy, contracted at the orifice, five cleft; corolla five petalled; seeds numerous, bristly, fixed to the inside of the calyx.

205. *RUBUS*. Calyx five cleft; corolla five petalled; berry composed of several one seeded granulations.

206. *DALIBARDA*. Calyx spreading, five cleft; petals five; pistils from five to eight; styles deciduous; fruit juiceless.

207. *FRAGARIA*. Calyx ten cleft; corolla five petalled; seeds smooth, fixed to a deciduous, berry-like receptacle.

208. *COMARUM*. Calyx ten cleft; corolla five petalled; seeds smooth, fixed to an ovate, spongy, permanent receptacle.

209. *POTENTILLA*. Calyx ten cleft; corolla five petalled; seeds naked, wrinkled, affixed to a small, juiceless receptacle.

210. *BOOTIA*. Calyx ten cleft with five nectariferous pits; corolla five petalled; seeds awnless; affixed to a juiceless receptacle.

211. *GEUM*. Calyx ten cleft; corolla five petalled; seeds with a jointed, bent awn; receptacle columnar.

ICOSANDRIA.

MONOGYNIA.

199. PRUNUS.

PRUNUS VIRGINIANA. L.

Wild Cherry.

Racemes erect, elongated; leaves deciduous, oval-oblong, acuminate, unequally serrate, smooth on both sides; petioles with about four glands.

Syn. CERASUS VIRGINIANA. Mich.

The wild cherry is with us a tree of middling size, although further to the south and west it attains to a magnitude of the first rate. Michaux mentions trees on the banks of the Ohio, which are from eighty to a hundred feet high, and their trunks from twelve to sixteen feet in circumference. The wood is a well known material in cabinet work, approaching mahogany in its colour and qualities. Leaves alternate, smooth, oval-oblong, acuminate, serrate, with commonly two pair of glands at the top of the petiole in front. Flowers in terminal clusters, white. Fruit small, black, somewhat bitter. The bark has a strong, bitterish, spicy taste, and has been found a useful tonic.—May, June.

*PRUNUS OBOVATA.

Dwarf Choke Cherry.

P. racemis patentibus; foliis obovatis, acutis, acutissime serratis, glabris.

Racemes spreading; leaves obovate, acute, very sharply serrate, smooth.

Syn. PRUNUS SEROTINA. Pursh. ? nec Willd.

A shrub common about fences and woods, rarely rising to the size of a small tree. The leaves are much broader than those of *P. Virginiana*, obovate, acute, generally obtuse at base, and sometimes hearted finely, equally, and very sharply serrate, serratures not glandular, glabrous on both sides except sometimes a small tuft of down in the axils of the lower veins beneath. Petioles commonly furnished with two glands near the top. Flowers white, in divergent, smooth racemes, considerably

larger and a fortnight earlier than those of *P. Virginiana*. Fruit small, red, bitter, strong, and astringent.—May.

It differs from *P. Virginiana*, and *P. serotina* of Muhlenberg and Willdenow, in its obovate and sharply serrated leaves, small size, *early* flowering and red fruit.

PRUNUS BOREALIS. *Pursh.* *Northern Wild Cherry.*

Corymbs with elongated pedicels; leaves oval-oblong, acuminate, slightly eroded, membranous, smooth; fruit subovate.

Syn. *CERASUS BOREALIS. Mx.*

A small tree, with very thin, delicate leaves, and small, red, astringent fruit.—On Blue hills, Milton. Common in Maine, where it succeeds to pine forests, which have been cut down.—May.

PRUNUS DEPRESSA. *Pursh.* *Sand Cherry.*

Umbels sessile, aggregate, few flowered; branches angular, prostrate; leaves wedge-lanceolate, slightly serrate, smooth, glaucous underneath; fruit ovate.

Syn. *CERASUS FUMILA. Mx.*

A small, trailing shrub, spreading its branches close to the ground.—On the shores of Lake Champlain.—May.

***PRUNUS LITTORALIS.** *Beach Plum.*

P. umbellis conglomeratis, paucifloris; pedunculis calycibusque subpubescentibus; foliis ovalibus acutis, serratis, venis subtus pubescentibus.

Umbels crowded, few flowered; peduncles and calyxes somewhat pubescent; leaves oval, acute, serrate, the veins pubescent beneath.

Syn. *PRUNUS SPHAEROCARPA. Mx.? nec Willd.*

A shrub with stout, straggling branches. Leaves scattered, crowded, oval or obovate, acute, single and doubly serrate, smooth or rugose above, slightly pubescent or tomentose beneath. Petioles short, pubescent, and biglandular. The flowers appear before the leaves on the sides near the extremities of the

last year's branches, in numerous umbels of from two to five flowers. Peduncles short, filiform, pubescent under a magnifier as well as the calyx. Corolla small, white. Fruit large, globular, eatable, with the flavour of the common plum.—Always near the salt water; abundant on Plum island.—May.—Fruit ripe in August and September.

Variety a. Fruit an inch in diameter, purple, with a glaucous bloom.

β. Fruit similar but smaller.

γ. Fruit crimson, shining.

This is our common *Beach plum*, much prized for its agreeable fruit, and deserving attempts at cultivation. I do not find it described by any author, unless possibly by Michaux under the name of *P. sphærocarpa*, a name previously appropriated by Swartz to a West Indian species. From *P. maritima* of Pursh it appears widely different in its inflorescence, acumination, and fruit.

DIGYNIA.

200. CRATÆGUS.

CRATÆGUS CRUS GALLI. *L.* *Common Thorn Bush.*

Thorny; leaves obovate, subsessile, shining, coriaceous; leaflets of calyx lanceolate, subserrate. *Ait. abr.*

A strong, branching, thorny shrub. Leaves inversely ovate, sharply and irregularly serrate, sometimes cleft, tough, smooth. Thorns two or three inches long, rigid, acute. Flowers white, in terminal corymbs. Calyx leaves linear.—About fences and thickets.—May, June.

TRIGYNIA.

201. SORBUS.

SORBUS AMERICANA. *Muhl.* *Mountain Ash.*

Leaves pinnate, leaflets glabrous, acute, subequally serrate, petioles glabrous.

Syn. SORBUS AUCUPARIA, β. Mx.

A small tree, common in mountain woods in the northern parts of New England. It is more slender and irregular in its growth than the cultivated *S. aucuparia* of Europe. Leaves pinnate, smooth; leaflets oblong-lanceolate, rounded at base, sharply serrate, pale underneath. Flowers white, in terminal corymbs.—I have not seen it nearer to Boston than Wachusett hill, where it flowers the first of June.

PENTAGYNIA.

202. PYRUS.

PYRUS ARBUTIFOLIA. Willd. *Choke Berry.*

Leaves obovate, acuminate, serrate, downy underneath, the midrib glandular above; flowers in corymbs.

Syn. MESPILUS ARBUTIFOLIA. Linn. Mich.

ARONIA ARBUTIFOLIA. Pers.

A slender shrub. Leaves oblong, oval, or obovate, finely serrate, the midrib spotted on the upper side, with small, dark glands. Flowers white, in compound, downy corymbs. Peduncles and calyx more or less downy. Petals roundish, concave. Filaments white, anthers crimson. Germ woolly, styles five, straight; stigmas capitate. Fruit with five cells and ten seeds, of the size of large whortleberries, rough, and astringent to the taste.—Low woods and thickets.—May, June.

PYRUS OVALIS. Willd. *Swamp Pyrus.*

Leaves oblong, acute, downy when young; flowers racemed; petals obovate; calyx pubescent.

Syn. MESPILUS CANADENSIS, a. Mx.

ARONIA OVALIS. Pers.

This species and the two following were considered by Michaux as varieties only. But though closely allied, they differ considerably in habit. The present is a shrub of moderate size, very common in swamps, and conspicuous for its white flowers in the early part of May. Leaves oblong, serrate, acute, very downy and whitish underneath when young, but glabrous when old. Flowers in long racemes, the pedicels and germs downy, the tips of the calyx smooth. Petals oblong-obovate. Fruit dark blue, of the size of whortleberries, pleasant to the taste, ripe in June.

PYRUS BOTRYAPIUM. *Willd.* *Wood Pyrus.*

Leaves ovate, sharply serrate, acute, glabrous; flowers racemed; petals linear; calyx mostly smooth.

Syn. *MESPILUS CANADENSIS*, β ? *Mx.*

MESPILUS ARBOREA. *Mx. f.*

ARONIA BOTRYAPIUM. *Pers.*

This is a small tree found in upland woods. Leaves ovate, sometimes cordate, finely and acutely toothed, very acute, glabrous both sides. The racemes are shorter and more spreading than in the foregoing species with from four to seven flowers. Peduncles brownish, smooth. Calyx smooth with the segments downy within. Petals white, linear-obovate, more spreading than in *P. ovalis*.—Roxbury, Brookline.—May.

PYRUS SANGUINEA. *Pursh.* *Round leaved Pyrus.*

Leaves oval, obtuse, finely serrate, subcordate at base; racemes few flowered; calyx glabrous; petals linear, obtuse.

I have specimens agreeing with the above character, formerly collected in the western parts of the state, from trees of middling height.—May.

203. SPIRÆA.

SPIRÆA ALBA. *Ehr.* *White Spiræa. Meadow Sweet.*

Leaves wedge-lanceolate, serrate, glabrous; flowers paniced.

Syn. *SPIRÆA SALICIFOLIA.* *Mich.*

A slender shrub three or four feet high, bearing large, terminal bunches of white flowers. Stems smooth, reddish. Leaves broad lanceolate, somewhat obtuse, smooth and thin, acutely serrate, tapering at base. Panicle terminal, composed of small flowering branches at the top of the stem, and from the axils of the upper leaves. Flowers small, crowded.—Meadows and wet pastures.—July, August.

SPIRÆA TOMENTOSA. *L.* *Downy Spiræa. Hardhack.*

Leaves lanceolate, unequally serrate, downy underneath; flowers twice racemed. *Willd.*

A very common shrub in pastures and low grounds, about the size of the last. Among its purple flowers the dead tops of the last year's fructification are conspicuous. Leaves nearly oval, thick, and tough, dark green above, whitish and downy underneath. Flowers small, blue or purple, in long conical bunches on the end of the stems.—July, August.—Very astringent.

POLYGYNIA.

204. ROSA.

ROSA RUBIGINOSA. L. *Sweet Briar. Eglantine.*

Fruit obovate, fruit and peduncles hispid ; prickles hooked ; leaflets oval, with reddish glands beneath.

Stem from three to four feet high, the younger ones reclining at top, the old ones much branched, armed with strong, hooked prickles. Leaves pinnate, with oval serrate leaflets, which give out an agreeable, strong scent on being rubbed. The under surface in most plants is slightly glandular, though less so than in the European sweet briar. Flowers red. Fruit scarlet, somewhat obovate, bristly or smooth.—Road sides.—June.—Introduced.

ROSA MICRANTHA. Sm. *Small flowered Sweet Briar.*

Fruit ovate ; fruit and peduncles somewhat hispid ; prickles hooked ; leaflets ovate, acute, with reddish glands beneath.

This species is more common than the last, which it resembles in the odour of its leaves. It is a larger bush, being frequently six feet high. When in flower its appearance is quite different, the flowers being white, and hardly more than half the size of the former.—Common in dry soils, road sides and pastures.—June.

ROSA CAROLINIANA. L. *Swamp Rose.*

Germes globular, hispid ; peduncles somewhat hispid ; stem with stipular prickles : petioles prickly. *L.*

This rose grows in swamps and in woods, sometimes forming thickets of itself. The stems vary greatly in the number and size of their prickles, even those which spring from the

same root. They are commonly of a reddish colour, and their prickles nearly straight. Leaves pinnate, with five or seven oval leaflets, sharply serrate and paler on the under side. Flowers red, growing in a sort of corymbs. Fruit spherical, flattened at the ends.—June, July.

205. RUBUS.

RUBUS OCCIDENTALIS. *L.* *Black Raspberry. Thimbleberry.*

Leaves trifoliate, downy underneath, stem prickly, petioles round. *L.*

Frequent about fences, thickets, &c. The stems are prickly, long and slender, bending over in the form of an arch, and covered with a bluish or glaucous powder, which readily rubs off. Leaflets in threes, oval, loosely serrate, acuminate, green above, whitish and downy underneath, the two lateral ones nearly sessile. Petioles roundish, prickly. Flowers white, in terminal racemes. Fruit black, sprightly, and pleasant to the taste.—May.

RUBUS STRIGOSUS. *Mich.*

Wild Red Raspberry.

Unarmed, strongly hispid, leaflets in threes, or five pinnate, oval, obtuse at base, lined and white-downy underneath, the odd one often sub-cordate. *Mich.*

A more delicate fruit than the last, found in similar places. The stem and branches are without prickles, but covered with thick stiff bristles. Petioles hispid, bearing one or two pairs of lateral leaflets and a terminal one; the lateral leaflets sessile. Flowers white, in terminal clusters with hispid peduncles. Fruit red, richly flavoured.—May.

*RUBUS SETOSUS.

Bristly Raspberry.

R. caule erecto, reclinato, hispido; foliis ternatis quinatisve, utrinque glabris, concoloribus.

Stem erect, reclining, bristly; leaves ternate or quininate, smooth and green on both sides.

Stem woody, erect at base, reclining, without prickles, but thickly covered with strong bristles. Petioles semicylindrical, channelled. Leaves ternate, a few younger ones quininate; leaflets

rhomboid-lanceolate, acute at base, smooth, or with the veins pubescent underneath, unequally serrate, the odd one petioled. Stipules long and linear. Flowers in racemes with bristly pedicels. Petals white, linear-obovate, distant. Fruit red, ripening late.—In a swamp at Sudbury.—June. Received also from Dr. Payne, Montreal.

RUBUS VILLOSUS.*Tall Blackberry.*

Bigelow, Medical Botany, Pl. xxxviii.

Pubescent, bristly and prickly; leaves in threes or fives, leaflets ovate, acuminate, serrate, with the petioles prickly; racemes naked, about twenty flowered; petals lance-ovate.

This shrub has a tall, branching, prickly stem, more or less furrowed and angular. Leaves mostly in threes, on a channelled, hairy petiole. A few are solitary and some quinate. Leaflets ovate, acuminate, sharply and unequally serrate, covered with scattered hairs above, and with a thick, soft pubescence beneath. The terminal leaflet is pedicelled, the two side ones sessile. The petiole and back of the middle rib are commonly armed with short recurved prickles. The flowers grow in erect racemes, with a hairy prickly stalk. The pedicels are slender, an inch or two in length, covered with glandular pairs, and supported by lanceolate bracts. Calyx divided into five ovate, concave, hairy segments, ending in an acuminate point or a lanceolate leaflet. Petals five, white, ovate or oblong, concave, contracted into a short claw at base. Stamens very numerous with roundish anthers and slender white filaments. Germs numerous, covering a conic central receptacle. Styles capillary, arising from the sides of the germs, persistent. Fruit a black, shining compound berry, formed of pulpy acini attached to the receptacle, each containing a single oblong seed.—Road sides. Flowers in June.—Fruit very pleasant, ripe in August and September.—Perennial.

* **RUBUS FRONDOSUS.***Leafy Raspberry.*

R. caule aculeato, erecto; foliis ternatis, quinatisve, pube simplici; racemo folioso, sub-decemfloro, petalis orbiculatis.

Stem prickly, erect; leaves ternate or quinate; pubescence simple; racemes leafy, about ten flowered; petals orbicular.

Stem erect, reddish, armed with straightish or slightly recurved prickles. Young branches covered with simple pubescence, and ending in leafy racemes. Leaves on short peduncles, mostly ternate, the lower ones sometimes five digitate, and upper ones simple; leaflets ovate, unequally serrate, pubescent beneath, nearly glabrous above, the lateral ones sessile, the terminal one on a short stalk. Racemes leafy, having a leaf at the base of most of the pedicels, about ten flowered, the upper flowers expanding first. Calyx segments ovate, acuminate. Petals orbicular, ovate, large, white. Fruit black, agreeable.

Approaches *R. villosus*, and has probably been confounded with it, but differs in the following marks, as well as in its habit, by which it may be distinguished at sight.

R. villosus.

Pubescence glandular.
Racemes nearly naked, about twenty flowered, the lower flowers opening first.
Petals lance-ovate with wide intervals when expanded.

R. frondosus.

Pubescence simple.
Racemes leafy, about ten flowered, the terminal flowers opening first.
Petals orbicular-ovate, much larger, and nearly in contact with each other when expanded.

Besides the above marks, *R. frondosus* is smoother, leaves more flat, and the terminal leaflet on a longer stalk.—Road sides in Roxbury.—May, June.

First observed by my pupil, Mr. H. Little.

RUBUS TRIVIALIS. *Mich.* *Low or running Blackberry. Dewberry.*

Stems procumbent; leaflets three or five, oval, serrate, nearly smooth; flower stalks mostly solitary.

Syn. RUBUS PROCUMBENS. Muhl.

Stems prickly, slender, flexible, running several yards upon the ground, but seldom putting out roots, unless accidentally covered. Leaves nearly smooth, green on both sides. Peduncles long, slender, mostly undivided, furnished with minute

prickles. Flowers solitary, white. Fruit large, black, sweet.—Common in barren sandy soils.—May.

***RUBUS SEMPERVIRENS.**

Evergreen Raspberry.

Rubus sarmentosopro-cumbens; caule aculeolato; foliis ternatis, foliolis obovatis, serratis, nitidis, sempervirentibus.

Stem procumbent, covered with minute prickles, leaves ternate, obovate, serrate, shining, evergreen.

A small, trailing species, found in damp woods and swamps. Stem woody, smooth, commonly covered with minute reflexed prickles, as are also the petioles. Stipules lanceolate. Leaves of the size of the strawberry, of a dark shining green, tapering and retuse at base, unequally serrate. They last through the winter and exhibit a dark or purplish appearance the ensuing spring. Flowers few, in a sort of raceme, with alternate, slender stalks. Calyx leaves ovate, acute, glabrous. Petals white, oblong, distinct. Berries small, black, sour.—July.

RUBUS ODORATUS. L.

Flowering Raspberry.

Leaves simple, palmate; stem unarmed, many leaved, many flowered. *L.*

A superb, flowering shrub, commonly cultivated. I have not seen it growing wild in the immediate vicinity of Boston, though it is plentiful at the distance of thirty or forty miles to the westward. Leaves simple, large, mostly five lobed, serrate; petioles and peduncles hairy. Flowers large, purple, forming a sort of corymb. Fruit dry.—Flowers in June and after.

RUBUS SAXATILIS. Mx.

Stone Raspberry.

Herbaceous, pubescent; leaves ternate, leaflets rhomboidal, acute, cut-toothed, naked, the odd one petioled; flowers about three, with elongated pedicels.

The stems of this species are annual, whereas those of most of the preceding are biennial, not flowering till the second year. About a foot high, with white flowers.—On dry hills, Danvers.—White mountains.—June.

206. DALIBARDA.

DALIBARDA REPENS. *Pursh.**White Dalibarda.*

Villous; shoots creeping; leaves simple, cordate, crenate; peduncles one flowered.

Syn. DALIBARDA VIOLAEOIDES. Mx.

RUBUS DALIBARDA. Willd.

A creeping plant, with white flowers. Leaves on long petioles, heart shaped, obtuse, crenate, covered with thin hairs. Peduncles as long as the petioles, terminating in a single flower. Calyx segments ovate, ciliate, somewhat toothed. Petals oval. Stamens capillary; styles few.—Among the decayed leaves in woods. Princeton.—June.

DALIBARDA FRAGARIOIDES. *Mx.**Yellow Dalibarda.*

Leaves ternate, leaflets wedge shaped, cut serrate, ciliate; scapes many flowered; tube of the calyx conical.

Considerably larger than the foregoing, with some resemblance to the strawberry. Leaves in threes, lobed and toothed, nearly smooth, ciliate. Scapes slender, furnished with a few simple or ternate, lanceolate bracts. Panicle few flowered; pedicels elongated, slightly hairy. Germs acute at base; calyx acute; petals oblong, yellow. Filaments numerous, persistent after the anthers have fallen. Woods, Hanover, New Hampshire.—June.

207. FRAGARIA.

FRAGARIA VIRGINIANA. *Ehr.**Wild Strawberry.*

Calyx of the fruit spreading; hairs of the petioles erect, of the peduncles appressed; leaves smooth above. *Willd.*

The common wild strawberry is a very delicious fruit, and when cultivated is inferior to few imported species. The berries ripen early, are of a light scarlet colour, exquisitely flavoured, but more soft and perishable than the other kinds. The herbage is more smooth and even, than in other species, the pedun-

cles shorter, so that the fruit is commonly concealed under the leaves. Flowers white, appearing in May.

Wild strawberries are frequently sour from the circumstance of their ripening in the shade among the high grass.

208. COMARUM.

COMARUM PALUSTRE. *L.**Marsh Cinquefoil.*

A genus nearly related to the last, with only one species. Stem round, rising from one to two feet. Leaflets three, five, or seven, oblong, serrate, whitish underneath. Flowers dark, dull purple, every part permanent. Calyx ten cleft, every other segment larger. Corolla of five small petals. Fruit enclosed in the flower, resembling a strawberry, but spongy and permanent.—Found in Neponset river and in Brighton.—June.—Perennial.

209. POTENTILLA.

POTENTILLA FLORIBUNDA. *Pursh.**Bushy Potentilla.*

Shrubby, erect, branching, hairy; stipules ovate, entire; leaves five-pinnate, leaflets linear-oblong, revolute; corymbs terminal, dichotomous, dense-flowered, calyx-segments subequal, as long as the petals.

Stems erect or ascending, shrubby, a foot high, covered with a deciduous, reddish bark, and with long fine hairs. Stipules at the base of the leaves and branches ovate, nerved, scarious, clasping, some bifid. Leaves pinnate, with slender, hairy petioles; leaflets five, in a sort of tuft, sessile, lanceolate, revolute at the edges, hairy, paler underneath. Flowers in close, compound corymbs on the ends of the branches. Calyx hairy, its segments subequal. Petals obovate, as long as the calyx.—In low grounds, Danvers; sent by Dr. Nichols.

On comparison with specimens of *P. fruticosa*, it has smaller and more numerous flowers.

POTENTILLA ANSERINA. *L.* *Silver Weed. Wild Tansey.*

Leaves interruptedly pinnate, serrate, silky underneath, stem creeping, peduncles one flowered. *Sm.*

A handsome plant, common on the marshes at South Boston and Cambridge. Stems hairy and reddish, creeping extensively

among the grass. Leaves pinnate, the large leaflets alternating with small ones, green above and of a fine silvery appearance beneath. Flowers yellow, solitary, on long, axillary peduncles.—June.—Perennial.—With us this is always a maritime plant.

POTENTILLA ARGENTEA. *L.* *Hoary Cinquefoil.*

Leaves quinate, wedge form, cut, downy underneath, stem nearly erect.

A small, humble species, frequent on Boston common and elsewhere in dry soils. Stems spreading, half erect, white and downy. Leaves alternate, consisting of five wedge form or spatulate leaflets, cut into a few lobes or large teeth at the end, white and downy underneath. Flowers numerous, on the ends of the branches, small, yellow.—From June to September.—Perennial.

POTENTILLA SIMPLEX. *Mich.* *Common Cinquefoil or Fivefinger.*

Erect, simple, hairy; leaves five-digitate, oblong, oval; peduncles lateral, solitary, elongated, one flowered. *Mich.*

Root abrupt. Stem erect at base, reclining at top, rough, hairy. Leaflets in fives, oval, deeply serrate, the nerves hairy underneath. Stipules cut into lanceolate lobes. The primary leaves are nearly sessile having in the axil of each a petioled leaf or two, a long filiform peduncle, and sometimes also the rudiment of a branch. Flowers yellow. Petals roundish, inversely heart-shaped, longer than the calyx.—Pastures and woods.—May, June.—Perennial.

POTENTILLA SARMENTOSA. *Muhl.* *Running Cinquefoil.*

Stem sarmentose; leaves quinate, leaflets obovate, obtuse, serrate, glabrous above, hairy beneath, petals roundish, longer than the calyx.

A very delicate species extremely common in dry pastures, spangling the grass with its yellow flowers throughout the month of May. Root somewhat abrupt. Stems procumbent, very short, at the time of the first flowing, but extending a foot or more

during the summer. Leaves quinate with hairy petioles. Leaflets obovate, obtuse, their upper half deeply serrated, glabrous above, paler and hairy underneath. Stipules hairy, acute, those of the stem about six cleft. Peduncles solitary, slender, hairy, longer than the petiole which springs from the same joint. Calyx segments hairy, acute, some of them furnished with a small tooth or two. Petals roundish, retuse, a little longer than the calyx. Anthers sagittate.

During the summer a fleshy thickening often takes place in various parts of the stem, apparently caused by insects. The flowers reappear in October.

Very distinct from *P. simplex*, though quoted by Pursh as synonymous.

POTENTILLA NORVEGICA. L. *Norway Cinquefoil.*

Leaves ternate ; stem dichotomous ; peduncles axillary. *L.*

An erect, hairy plant. Stem round, straight, forked at top. Leaves in threes, oval, cut-serrate, their petioles and veins covered with long hairs. Stipules ovate, acute, somewhat toothed. Flowers numerous, axillary, and terminal, somewhat crowded. Petals yellow, shorter than the calyx.—By road sides and thickets.—July—Perennial.

POTENTILLA TRIDENTATA. L. *Mountain Potentilla.*

Leaves ternate, evergreen ; leaflets wedge shaped, three toothed at the end ; peduncles few flowered.

A suffruticose alpine plant of all our northern mountains. The lower part of the stem is woody, prostrate, rooting, with subulate stipules at top, below the leaves. Petioles short, slightly hairy. Leaflets three, sessile, smooth, coriaceous, oblong-wedge shaped, uniformly ending in three nearly equal teeth. Flowering stalk hairy, with several small, ternate, lanceolate leaflets. Flowers few, in a sort of irregular corymb. Calyx acute, the narrow segments more obtuse. Petals oblong, white, longer than the calyx.—Abundant on the summit of Wachusett. On the White mountains, Moosehillock, &c. In the college yard at Brunswick.—June.

210. BOOTIA.*

BOOTIA SYLVESTRIS.

Bootia.

B. caule erecto, foliis inferioribus pinnatis, hirsutotomentosis; floribus subcorymbosis, subsessilibus.

Stem erect, lower leaves pinnate, hairy and downy; flowers in small corymbs, nearly sessile.

The whole herb is covered with hairy down. Root leaves and lower stem leaves pinnate, leaflets sessile, oval, acute, doubly toothed and slightly cut, the lower ones and sometimes the intermediate ones smaller. Stem two feet, high, rigid, erect, round, furrowed. Stipules half ovate, acuminate, mostly entire. Upper leaves ternate or simple. Flowers terminal, in small crowded corymbs. Calyx segments downy, alternately lanceolate and ovate. Petals orbicular, white, as long as the calyx. Anthers compressed, roundish. Nectary a stellate cavity surrounding the base of the receptacle of the germs, having pits in its five points opposite the narrow segments of the calyx. Seeds oblong, pointed, awnless. Receptacle hairy.

Found in June 1816, on the precipice behind Bellows' Falls, N. H. Also in Deerfield, Mass.

I am not aware that this plant has been yet described. With some of our botanists it has passed for *Geum agrimonioides* of Pursh; but it is no *Geum*. The peculiar nectary alone separates it from *Potentilla*.

211. GEUM.

GEUM RIVALE. *L.**Water Avens.*

Radical leaves lyrate; stipules ovate, acute, cut; flowers nodding, awns feathery, twisted. *Sm.*

A fine plant conspicuous in meadows for its high, nodding, dark coloured flowers. Stem round, erect, drooping at top. Radical leaves lyrate or interruptedly pinnate, the terminal leaflet large and lobed, the whole serrate and hairy. Flowers terminal, two or three on a stalk; calyx reddish brown, closed;

* Amicissimo, et de botanice optime merito, Francisco Boott, genus dictatum.

petals erect, hardly exceeding the calyx, inversely heart-shaped, veined and shaded with yellow purple. The fruit becomes erect, and is crowned with long, feathery, contorted awns.—May, June.—Perennial.

GEUM VIRGINIANUM. *L.*

Virginian Avens.

Leaves trifoliate, upper ones lanceolate; petals shorter than the calyx; seeds hairy; with naked awns, twisted at top.

Stem erect, one or two feet high, branching, hairy. Lower leaves in threes, sometimes in fives; the upper ones simple, oval, or lanceolate, the whole unequally serrate. Stipules large, ovate, few toothed. Flowers nodding, fruit erect. Petals white, not longer than the calyx.—Thickets.—June, July.—Perennial.

GEUM ALBUM. *Willd.*

White Avens.

Pubescent, leaves of the root pinnate, of the stem ternate; stipules cut; flowers erect; petals not longer than the calyx.

Stem erect, hairy, branching at top. Leaves variable, those of the root and lower part of the stem pinnate, or ternate, or simple with appendages on the petiole, all of them hairy. Stipules large, toothed, and lobed. Flowers small. Calyx acute, hairy. Petals shorter than the calyx, entire, whitish. Seeds hairy. Awns reflected, smooth, geniculated or uncinat and hairy at tip.—About hedges.—July.—Perennial.

Between this and the foregoing there are intermediate varieties.

GEUM STRICTUM. *Willd.*

Yellow Avens.

Hairy; leaves all interruptedly pinnate, leaflets ovate, toothed, the terminal one largest; flowers erect, petals longer than the calyx.

A tall, hairy species with yellow flowers. Terminal leaflet large. Alternate segments of the calyx linear. Flowers yellow.—On Prospect hill, Charlestown.—June.—Perennial.

In a specimen gathered in Bretton woods, near the White mountains, the stem leaves are trifid and the petals hardly longer than the calyx.—Perhaps a new species.

GEUM PECKII. *Pursh.**Peck's Geum.*

Leaves reniform, the petiole pinnately appendaged ; flowers several on a stalk ; petals twice as long as the calyx.

Root leaves large, pinnate, the lateral leaflets minute, terminal one very large, reniform, cut and toothed, glabrous, slightly ciliate. Petioles long, ending in broad ciliate stipules. Stem round, pubescent, four or five inches high, furnished with a few small, cut, and toothed leaflets, and bearing from one to five flowers. Calyx segments acute, the alternate ones minute and linear. Petals orbicular, yellow, twice the length of the calyx. Stamens numerous, slender, yellow. Styles very short. Seeds hairy. Awns erect, slightly hooked at tip.

Discovered by the late Professor Peck on the summit of the White mountains. Very distinct from *Geum montanum*, with which I have compared it. *Pursh*, probably from seeing bad specimens, represents it as one flowered, and with petals equaling the calyx.—July.



Class XIII. POLYANDRIA. *Many stamens.*

Order I. MONOGYNIA. *One style.*

212. CHELIDONIUM. Calyx two leaved ; petals four ; silique superior, two valved, one celled, linear ; seeds crested.

213. ACTÆA. Calyx four leaved ; petals four ; berry one celled, many seeded ; seeds nearly flat.

214. CISTUS. Calyx five leaved, two of the leaves smaller ; capsule superior, three valved, opening at top.

215. HUDSONIA. Calyx three parted, tubular ; petals five ; capsule one celled, three valved, three seeded.

216. *SARRACENIA*. Calyx double ; the lower three leaved, the upper five leaved ; petals five ; stigma shield like ; capsule five celled.

217. *TILIA*. Calyx five parted ; petals five ; capsule superior, coriaceous, five celled, five valved, opening at the base.

218. *SANGUINARIA*. Calyx two leaved caducous ; corolla eight petalled ; capsule two valved, many seeded.

219. *PODOPHYLLUM*. Calyx three leaved caducous ; corolla from six to nine petalled ; berry one celled, crowned with the stigma.

220. *NUPHAR*. Calyx five or six leaved ; corolla many petalled, very short ; petals and stamens truncated, inserted in the receptacle ; stigma a disc marked with prominent rays.

221. *NYMPHÆA*. Calyx four or five leaved ; corolla many petalled, petals and stamens subacute, inserted on the germ ; stigma a tubercle surrounded with antheroid rays.

Order V. PENTAGYNIA. Five styles.

222. *AQUILEGIA*. Calyx none ; petals five ; nectaries five, horn shaped, alternate with the petals.

Order VI. POLYGYNIA. Many styles.

223. *CLEMATIS*. Calyx none ; petals from four to six ; seeds with tails ; receptacle capitate.

224. *ATRAGENE*. Calyx none ; corolla from four to six petalled ; nectaries four, spatulate, alternate with the petals ; seeds with tails.

225. *THALICTRUM*. Calyx none ; petals four or five ; seeds without tails.

226. *COPTIS*. Calyx none ; petals five or six, ca-

duccous ; nectaries five or six, cucullate ; capsules five or six, stipitate, rostrate, many seeded.

227. *CALTHA*. Calyx none ; petals five ; nectaries none, capsules many.

228. *HYDROPELTIS*. Calyx none ; petals six, three external shortest ; nectaries none ; capsules several, one celled, two seeded, invested with the permanent corolla.

229. *HEPATICICA*. Calyx three leaved ; petals from six to nine ; seeds naked.

230. *ANEMONE*, Calyx none ; petals from five to nine ; seeds numerous.

231. *TROLLIUS*. Calyx none ; petals from five to eight, deciduous ; nectaries from five to eight, linear ; capsules many, sessile, many seeded.

232. *RANUNCULUS*. Calyx five leaved ; petals from five to eight, with a pore or scale bearing honey at the base of each, inside ; seeds naked.

233. *MAGNOLIA*. Calyx three leaved ; petals from six to nine ; capsules two valved, clustered ; seeds pendulous.

234. *LIRIODENDRON*. Calyx three leaved ; petals six ; seeds ending in a scale, imbricated into a cone.

POLYANDRIA.

MONOGYNIA.

212. *CHELIDONIUM*.

CHELIDONIUM MAJUS. *L.*

Celandine.

Peduncles umbelled. *L.*

Found among rubbish, under fences, &c. attaining the height of one or two feet. Leaves pinnate, spreading ; leaflets lobed,

pale green, smooth, their stalks winged where they join the main petiole. Flowers yellow, in a remote umbel, proceeding from the axils of the leaves. The calyx, petals, and stamens are extremely deciduous, which occasions perplexity in examining the plant. Every part of this vegetable abounds with a bright yellow, or saffron coloured juice.—May, June.—Perennial.

213. ACTÆA.

ACTÆA RUBRA. *Willd.**Red Actæa.*

Raceme hemispherical; petals shorter than the stamens, acute; pedicels of the fruit smaller than the peduncles.

*Syn. ACTÆA SPICATA. Mx.**ACTÆA BRACHYPETALA. De Cand.**ACTÆA AMERICANA, β, RUBRA. Pursh.*

Stem roundish, glabrous, covered with a slight glaucous bloom. Leaves several times ternate, on long smooth petioles, with swelling bases partly sheathing the stem. The extreme divisions are slightly pubescent, and channelled above. Leaflets heart shaped, cut and toothed, the odd one usually three lobed, veined, glabrous, the veins slightly pubescent underneath. Raceme hemispherical or half ovate. Peduncles round, smooth, slightly pubescent at top. Pedicels pubescent, largest at the extremities. Calyx leaves four, oblong, green, striate, concave, caducous. Petals often eight or ten, white, oval, acute, unguiculated, deciduous. Stamens numerous. Filaments twice as long as the petals, filiform, subclavate, white. Anthers, before bursting, cordate, acute, compressed, white. Pistil smooth, white. Germ oval, placed obliquely, with a furrow on one side. Style none. Stigma oval, two lobed, recurved at the ends. Berries shining, cherry red, about sixteen seeded, on long filiform pedicels, a fourth part as large as the common peduncle.—Woods.—May.—Perennial.

*ACTÆA ALBA.

White Actæa.

A. racemo oblongo; petalis staminibus æqualibus, truncatis; pedicellis fructûs pedunculi instar.

Raceme oblong ; petals equal to the stamens, truncate ; pedicels of the fruit as large as the peduncle.

Syn. *ACTAEA SPICATA*, β , *ALBA*. *Mx.*

ACTAEA AMERICANA, α , *ALBA*. *Pursh.*

ACTAEA PACHYPODA. *Elliott.*

Stem and leaves like the preceding, but somewhat larger and smoother. Raceme oblong, twice the length and half the breadth of the preceding ; the pedicels being shorter and thicker. Calyx leaves four, white, oblong, concave, caducous. Petals four to eight, as long as the stamens, white, oval, unguiculated, dilated upwards, and truncated. Stamens white, as long as the petals, filaments as in the last but shorter, anthers heart shaped, obtuse, white or yellowish. Germ and stigma as in the preceding. Berries milk-white, tipped with red, smaller and about eight seeded, on short, red, incrassated pedicels as large as the common peduncle.—Woods.—May.—A week or two later than the foregoing.—Perennial.

First published as a distinct species, in my name, in Eaton's Manual of Botany, afterward by Mr. Elliott under another name. It is remarkably distinct in its truncated petals, large pedicels, and white, few seeded fruit. The herbage of these two species and of *A. spicata* of Europe is precisely similar.

214. CISTUS.

§ *Subgenus* HELIANTHEMUM. *Capsule one celled ; septa in the middle of the valves.*

CISTUS CANADENSIS. *L.*

Canadian Cistus.

Herbaceous, without stipules ; leaves alternate, lanceolate, stem ascending. *L.*

Syn. *HELIANTHEMUM CANADENSE*. *Mich.*

Stem slender, downy, hardly a foot high. Leaves small, nearly sessile, lanceolate, obtuse, downy, white underneath. Flowers lateral, solitary, yellow. Stamens inclined to the upper side. Petals very tender and deciduous ; after they have fallen, the plant has the appearance of *Lechea major*, for which it has been mistaken.—Sandy pastures and hills.—June.—Perennial.

At the beginning of frosts, the bark cracks and rolls backward.

at which time the fragments are found connected by a mass of fibrous, icy crystals.

115. HUDSONIA.

HUDSONIA TOMENTOSA. *Nutt.*

Downy Hudsonia.

Canescent, tomentose; leaves ovate, imbricated, shorter than the intervals of the stem; flowers subsessile; calyx obtuse.

A native of the sandy sea shore at Nantucket, Plumb island and other places, forming dense, clustered thickets. The whole plant is covered with whitish down. Stems ascending, studded with short branches, which are covered with minute, acute, imbricated leaves. Flowers small, on short, lateral, leafy stalks. Calyx of three leaves, two of which are bifid. Petals five, obovate, bright yellow. Stamens about twenty; filaments a little contorted, anthers roundish. Germ ovate, style crooked.—July.

216. SARRACENIA.

SARRACENIA PURPUREA. *L.*

Sidesaddle Flower.

Leaves decumbent, shorter than the scape, inflated; ventral wing arched; appendix broad heart shaped, waved.

The whole of this genus are plants of very singular structure. The *Sarracenia purpurea* is the only one which endures our climate. The leaves, which are all radical, are formed by a large hollow tube, swelling in the middle, curved and diminishing downward, till it ends in a stem, contracted at the mouth, furnished with a large, spreading, heart shaped appendage at top, which is hairy within, the hairs pointing downwards; and a broad, wavy wing extending the whole length on the inside. The full grown leaves will contain a wine glass of water, and are rarely found empty. The scape is long, smooth, and cylindrical, supporting a large, nodding flower. Exterior calyx of three small leaves; interior of five ovate, obtuse leaves, shining, and of a brownish purple. Petals five, panduriform, obtuse, repeatedly curved inward and outward and finally inflected over the stigma, brownish purple above, green below, deciduous. Stamens numerous, with short filaments and large bilocular, oblong,

peltate, yellow anthers. Style short, cylindrical supporting the broad, spreading stigma, divided, at its margin, into five bifid lobes, alternating with the petals. Properly speaking this curious plant has five stigmas, which are projecting points with moist tops situated under the notches of the lobes.—Swamps and meadows.—June.—Perennial.

217. *TILIA*.*TILIA AMERICANA*. *L.**Lime Tree or Bass Wood.*

Leaves roundish-heart shaped, abruptly acuminate, sharply serrate, smooth; petals truncated at top; nut ovate. *Mich. f.*

A tree of the middle size, remarkable for the neatness of its foliage, and the singularity of its flowering. The leaves are large, roundish, heart-shaped at base, finely serrated. The footstalk supporting a bunch of flowers, proceeds from the centre of an oblong, pale, floral leaf or bracte, as in the others of the genus. Flowers greenish white, succeeded by small, hard, greyish capsules. The wood of this tree is white, smooth, and soft. It is used in the manufacture of certain kinds of furniture, and of the panels of carriages. The bark is fibrous, strong, and flexible, and makes tolerable ropes.—July.

218. *SANGUINARIA*.*SANGUINARIA CANADENSIS*. *L.**Blood Root.*

Bigelow, Medical Botany, Pl. vii.

This is one of our earliest spring flowers. The flower and leaf proceed from the end of a horizontal, fleshy, abrupt root, fed by numerous radicles. This root makes offsets from its sides, which separate as the old root decays, acquiring by this separation the abrupt or premorse form.

Externally the colour of the root is a brownish red. Internally it is pale, and when divided emits a bright orange coloured juice from numerous points of its surface. The bud or hybernaculum, which terminates the root, is composed of successive scales or sheathes, the last of which acquires a considerable size, as the plant springs up. By dissecting this hybernaculum in the summer or autumn, we may discover the embryonic leaf and flower

of the succeeding spring, and with a common magnifier, even the stamens may be counted.

The *Sanguinaria* is smooth throughout. The leaves grow on long channelled petioles. When spread out, they are reniform or heart shaped, with large, roundish lobes separated by obtuse sinuses. The under side is strongly reticulated with veins, it is paler than the upper, and at length becomes glaucous. The scape is round, rises in front of the petiole, and is infolded by the young leaf. The calyx consists of two concave, ovate, obtuse leaves, which are perfect in the bud, but fall off when the corolla expands. Petals eight, spreading, concave, obtuse, the alternate or external ones longer, so that the flower has a square appearance. This is its natural character, although cultivation sometimes increases the number of petals. Stamens numerous, with oblong yellow anthers. Germ oblong, compressed; style none; stigma thick, somewhat two lobed. Capsule oblong, acute at both extremities, two valved. Seeds numerous, roundish, compressed, dark shining red, half surrounded with a peculiar white vermiform appendage, which projects at the lower end.

After the flower has fallen, the leaves, continue to grow, and by midsummer have acquired so large a size as to appear like a different plant.—Woods and thickets, South Boston and Cambridge.—April. Perennial.

The root is a violent emetic.

219. PODOPHYLLUM.

PODOPHYLLUM PELTATUM.

May Apple.

Bigelow, Medical Botany, Pl. xxiii.

Leaves two, peltate, lobed.

The May apple has a jointed running root about half the size of the finger, by which it spreads extensively in rich grounds, where it gets introduced. The stem is about a foot in height, and invested at its base by the sheaths which covered it when in bud. It is smooth, round, and erect, dividing at top into two round petioles from three to six inches long. Each petiole supports a large peltate, palmate leaf, smooth above, slightly pubescent beneath, deeply divided into about seven lobes, which are

wedge-shaped, two parted and toothed at the extremity. On the inside the leaf is cleft almost to the petiole. In barren stems which support but one leaf this does not take place, and the leaf is very perfectly peltate. In the fork of the stem is a solitary flower on a round, nodding peduncle one or two inches long. Calyx of three oval, obtuse, concave leaves, cohering in the bud by their scarious margins, and breaking off at base when the flower expands. Petals from six to nine. Linnæus makes them nine in his generic character, but in this climate I have found them more frequently seven even in luxuriant specimens growing in very rich soil. They are obovate, obtuse, concave, smooth, white, with slight transparent veins. Stamens shorter than the petals, curving upwards; anthers oblong, twice as long as their filaments. Germ oval, compressed, obscurely angular. Stigma nearly sessile, convex, its surface rendered irregular by numerous convolutions and folds. The flower is succeeded by a large acid, ovate, yellowish fruit, which is one celled, many seeded and crowned with the stigma. Its early period of ripening has given it the trivial name of May Apple.—The root is medicinal, answering as a substitute for jalap.—It is found native at Medway, twenty five miles from Boston.—May.—Perennial.

220. NUPHAR.

NUPHAR ADVENA. *Ait.**Yellow Water Lily.*

Calyx six leaved; petals numerous; capsule furrowed; stigma crenate; leaves heart shaped, the lobes divaricate.

Syn. NYMPHÆA ADVENA. Ait. Kew. 1st Edit.

This plant is usually considered distinct from the *Nuphar lutea* of Europe, though there is still some confusion in the discriminating marks laid down by authors. The present species certainly partakes the character of both. Are they in reality more than varieties?

Roots very large, creeping and irregular, like those of *Nymphaea*. Leaves oblong-heart shaped with rounded lobes, polished on the upper surface, always floating in *deep* water, and erect in *shallow*. Petioles exactly *semicylindrical*. Scapes round, spongy, made up of equal longitudinal tubes, which are hairy within, at

seen by a magnifier. Calyx of six concave leaflets, the three outermost green and roundish or ovate; the three inner ones resembling petals, somewhat wedge-shaped, retuse, yellow shaded with dull crimson, sometimes with green.

Petals? about fourteen, less than half the length of the calyx, yellow, wedge shaped, truncated, fleshy, impressed by the stamens, but without any thing like *nectariferous furrows*. Stamens numerous, linear, flat topped, erect in the bud, recurved in the flower, inserted into the sides of the receptacle below the germ. Anthers of two longitudinal cells on the upper side of the filaments. Germ large, ovate, furrowed on the outside. Stigma peltate, sessile, circular, its border slightly undulated or crenate, its upper surface with a central depression, from which proceed about twenty slightly prominent rays, which, by their appearance, are so many distinct stigmas, each one corresponding to a cell in the germ.—Ponds and ditches.—May, June.—Perennial.

The furrowing of the petals and germ, and the crenatures of the stigma, are merely produced by the apposition of the stamens in the bud. The petals and stamens are also truncated, in consequence of the depressed and globular form of the bud; which is one of the best generic marks.

In the number of its calyx leaves, and its undulated stigma, this plant is *N. advena*. In its semicylindrical petioles and number of rays of the stigma, it is *N. lutea*. In northern latitudes where the roots can only exist in deep water, the leaves are always floating; in southern, where they can live in shallow water, the leaves are erect.

NUPHAR KALMIANA. *Ait.*

Kalm's Water Lily.

Leaves cordate; the lobes subapproximate; calyx five leaved; stigma cut with from eight to twelve rays.

A small species appearing like a diminutive offspring of the preceding. In Sudbury river.—Mr. Boott—June.

221. NYMPHÆA.

NYMPHÆA ODORATA.

Sweet scented Water Lily.

Bigelow, Medical Botany, Pl. lv.

Leaves orbicular-cordate, entire; the lobes acumi-

nate, and veins prominent beneath ; calyx four leaved, equal to the petals.

Few plants possess a more exquisite fragrance than the common white water lily. It is found only in deep waters, where its roots are secured from the frosts in winter by a sort of natural hotbed being thus provided for it. The roots creep through the muddy bottoms of ponds to a great extent. They are very rough, knotted, blackish, and as large as a man's arm. The stalks, both of leaves and flowers, spring directly from the root. They vary in length, from one foot to five or six, according to the depth of the water. Petioles somewhat semicircular, scapes round. Both are perforated throughout by long tubes, or air vessels, which serve to float them. The leaves, which swim on the surface, are nearly round with a cleft or sinus extending to the centre, at which the petiole is inserted in a peltate manner. The lobes on each side of this sinus are prolonged into an acute point. The upper surface is of a bright glossy green, almost without veins ; the lower surface is reddish and marked by a multitude of strong prominent veins diverging from the centre. The calyx has four lanceolate leaves, green without and white within. Petals numerous, lanceolate, of a delicate whiteness, with sometimes a tinge of red on the outside. Stamens numerous, yellow, in several rows, inserted on the germ ; filaments dilated, especially the outer ones, so as to resemble petals ; anthers in two longitudinal cells growing to the filaments and opening inwardly. The stigma is surrounded by from twelve to twenty-four rays, resembling abortive anthers, at first incurved, afterwards spreading. At the centre is a solid, moist, hemispherical protuberance, which has been usually called a nectary, but which appears to me to be the true stigma.—Fruit a large, roundish, many celled berry, impressed with the marks of the petals and stamens, ripening under water. Seeds numerous, small.

Common in deep rivers and ponds.—July.—Perennial.

PENTAGYNIA.

222. AQUILEGIA.

AQUILEGIA CANADENSIS. *L.* *Wild Columbine.*

Nectaries straight; stamens longer than the corolla.
L.

This early flower is more delicate in its habit and colours than the common garden species. Root somewhat fusiform, penetrating the clefts of rocks. Stem erect, branching. Leaves once or twice ternate, lobed. Flowers on the ends of the branches, pendulous, scarlet without, and yellow within. The nectaries resemble straight horns, alternating with the petals, which are oval and acute. Stamens numerous, yellow, projecting. Filaments filiform, unequal; anthers oval. Germs oblong, acute, pubescent, appressed together. Styles filiform. After flowering the fruit becomes erect.—Dry hills, rocks, and pastures.—April, May.—Perennial.

POLYGYNIA.

223. CLEMATIS.

CLEMATIS VIRGINIANA. *L.* *Traveller's Joy. Virgin's Bower.*

Leaves trifoliate; leaflets heart-shaped, sublobate-angular, climbing; flowers diœcious. *L.*

A climbing hardy vine. The stem gives off at intervals a pair of opposite petioles, which twine round objects of support, serving the purpose of tendrils; each bears three heart-shaped leaflets, which are variously toothed and lobed. Peduncles axillary, bearing cymes of white flowers, which are diœcious, the fertile flowers having imperfect anthers. The most remarkable appearance of this plant is when in fruit; the long feathery tails of the seeds appearing like tufts of wool. Grows in low ground.—Very abundant on the banks of the Neponset river, Milton.—August.

224. ATRAGENE.

ATRAGENE AMERICANA. *Sims.* *Atragene.*

Leaves in whorls of fours, ternate; leaflets cordate, subentire; nectaries acute.

Syn. *CLEMATIS VERTICILLARIS.* Decandolle.

An elegant climbing vine with large flowers. The stem gives off opposite axillary buds, out of each of which proceed two ternate leaves and a fine purple flower. Petals four, oblong-ovate, ciliate, an inch or more in length.—In Brooklyn, Connecticut, and in Vermont.—June.

225. THALICTRUM.

THALICTRUM DIOICUM. L.

Early Thalictrum.

Flowers diœcious; filaments filiform; leaflets roundish, with obtuse lobes.

A small species, flowering in woods early in May. Stem smooth, very slightly furrowed, jointed. Leaves compounded twice or more; leaflets smooth, thin, roundish or reniform, paler beneath, with rounded lobes and teeth. Flowers paniced. Corolla of about five oval, obtuse, purplish petals. The barren flowers have many stamens with capillary filaments, and oblong, brown or purplish, and sometimes yellow anthers. The fertile flowers are smaller and less crowded. Germs from four to twelve, with curved stigmas. Seeds oval, furrowed, tipped with the style.

THALICTRUM CORYNELLEUM. Decand. *Meadow Thalictrum.*

Flowers polygamous; filaments clavate; fruit sessile, striate; leaflets obtusely three lobed, pale underneath.

Syn. *THALICTRUM POLYGAMUM.* Muhl?

A tall plant, common in meadows. Stem erect three or four feet high, smooth, furrowed, jointed. Leaves more than decomposed, with jointed petioles; leaflets rounded, obtuse or hearted at base, smooth, green above, pale underneath, ending in several obtuse lobes. Flowers paniced. Corolla of four or five white or greenish petals, deciduous. The barren plants contain about forty stamens in each flower with white, club shaped filaments and oblong yellow anthers. The fertile plants have a few stamens of the same kind, surrounding a bunch of oval greenish germs, each of which bears a white recurved stigma. Seeds oval, ribbed.—June, July.

226. COPTIS.

COPTIS TRIFOLIA.

Goldthread.

Bigelow, Medical Botany, Pl. v.

Leaves ternate ; scape one flowered.

Syn. HELLEBORUS TRIFOLIUS. L.

The roots of this plant, from which the name of *Goldthread* is taken, are perennial and creeping. On removing the moss and decayed leaves from the surface of the ground, they discover themselves of a bright yellow colour, running in every direction. The bases of the new stems are invested with a number of yellowish, ovate, acuminate stipules. Leaves ternate, on long slender petioles ; leaflets roundish, acute at base, lobed and crenate, the crenatures acuminate ; smooth, firm, veiny. Scape slender, round, bearing one small, starry, white flower, and a minute, ovate, acute bracte at some distance below. Calyx none. Petals five, six, or seven, oblong, concave, white. Nectaries five or six, inversely conical, hollow, yellow at the mouth. Stamens numerous, white, with capillary filaments and roundish anthers. Germs from five to seven, stipitate, oblong, compressed ; styles recurved. Capsules pedicelled, umbelled, oblong, compressed, beaked, with numerous black, oval seeds attached to the inner side.—Woods, Brookline.—Perennial.—The root is a strong bitter, used in medicine.

227. CALTHA.

CALTHA PALUSTRIS. *L. Marsh Marigold. Meadow Cowslip.*Stem erect ; leaves round, heart shaped. *Forster.*

Brought to market in the spring under the name of *Cowslips*. At that season its bright yellow blossoms are very common and conspicuous in meadows and wet situations. Stem upright, furrowed. Leaves smooth, heart or kidney shaped, crenate, the radical ones on petioles, those of the stem nearly sessile. Flowers on axillary stalks, with large, roundish, glossy petals of a bright yellow, as are the stamens. The young buds are sometimes substituted for capers.—Perennial.

228. HYDROPELTIS.

HYDROPELTIS PURPUREA. *Mich.**Water Target.**Syn. IXODIA PALUSTRIS. Solander.**BRASENIA HYDROPELTIS. Muhl.*

An aquatic plant, the only species of its genus. Its leaves which can hardly be mistaken for any thing else, are perfectly elliptical, with the leaf stalk inserted exactly in their centre, forming a centro-peltate leaf. Their upper surface is smooth and shining, like those of the water lilies, among which they float. Flowers dark purple; petals six, the three outermost shortest. Stamens numerous. Germs oblong with incurved styles. The immersed portions of the plant, particularly the stalks and young leaves are clothed with a thick gelatinous substance, transparent, and insipid to the taste.—In Fresh pond, and other stagnant waters.—July.—Perennial.

229. HEPATICA.

HEPATICA TRILOBA. *Willd. enum. Hepatica. Early Anemone.*

Leaves mostly three lobed, the lobes entire; scape one flowered.

Syn. ANEMONE HEPATICA. L.

This delicate little plant is one of the earliest visitors in spring, flowering in sunny spots before the snow has left the ground. The flowers appear before the leaves on hairy scapes. Calyx of three ovate, obtuse, hairy leaflets, situated on the scape at a distance below the petals. Petals oblong, obtuse, purple, sometimes white. Seeds numerous, sessile, ovate, acute, hairy, supported by the persistent calyx. The leaves are heart shaped at base, and divided into three, rarely five, entire lobes.

Variety a. Lobes of the leaves obtuse. Sweet Auburn, Brookline.—April, May.

β. Lobes acute. On the Ascutney mountain.—May, June.

230. ANEMONE.

ANEMONE NEMOROSA. *Mich.**Wood Anemone.*

Seeds pointed; leaves three; leaflets lobed; stem one flowered.

This species and the next are among the earliest flowers of spring, appearing in April, and continuing through the month of May. In this the root is creeping. Stem erect, supporting a single flower on its summit, and three compound leaves given off in a whorl below. Leaflets toothed and lobed, paler underneath. Flower of five petals, which are white, shaded with purple on the outside. The whole plant is acrimonious to the taste.—In woods and about fences, very common.—Perennial.

ANEMONE THALICTROIDES. L. *Rue leaved Anemone.*

Flowers umbelled; stem leaves simple, whorled; root leaves twice ternate. L.

Syn. THALICTRUM ANEMONOIDES. Mich.

Readily distinguished from the last, by its number of flowers. Root tuberous. Stem upright, simple, divided at top into a sort of umbel, of several flowers accompanied by a number of simple heart shaped, three lobed leaves. The leaves which proceed from the root are compound, usually three times ternate. Flowers white, petals varying in number; the largest flowers having eight or ten.—Woods and pastures.—April, May.—Perennial.

ANEMONE VIRGINIANA. L. *Tall Anemone.*

Stem branched; petioles three leaved, leaflets cut-lobed, serrate; flower stalks wand-like; seeds in an oblong ovate head, woolly. Mich.

A tall, very straight plant, unlike in its habit to those described. Stem two or three feet high, round, hairy; leaves ternate, deeply cut and lobed, hairy, paler underneath. Peduncles very long, straight, erect, parallel. Flowers terminal, green, solitary. Petals oblong, acute, covered outside with silken down. Stamens and styles very numerous. The seeds form an oblong cylindrical head. Found in dry woods, road sides, &c.—June, July.—Perennial.

231. TROLLIUS.

TROLLIUS LAXUS. *Salisb.* *American Trollius.*

Petals five, oblong, spreading; nectaries shorter than the stamens.

Syn. TROLLIUS AMERICANUS. *Donn.*

This plant resembles a Ranunculus, and is easily passed by for one of the common species of that genus. Leaves palmate, lobed, cloven almost to the petiole into five segments or leaflets, the middle one distinct, all of them smooth, cut, and toothed. Petals yellow, round-obovate. Capsules about six, erect, crowned with the persistent styles. Gathered in Hanover, N. H.—June.—Perennial.

232. RANUNCULUS.

RANUNCULUS FLAMMULA. *L.* *Small Spearwort.*

Smooth; stem declining; leaves lanceolate, the lower ones petioled; peduncles terminal and axillary, one flowered; calyx somewhat reflexed.

Stem somewhat decumbent; leaves lanceolate, acute, entire or toothed, smooth. Flowers small, solitary, yellow. Peduncles round. Calyx reflexed.—In ditches, &c. rare. Introduced.—June to August.—Perennial.

RANUNCULUS FILIFORMIS. *Mx.* *Filiform Crowfoot.*

Smooth and very small; stems filiform, creeping; geniculate; joints one flowered; leaves linear-subulate, obtuse. *Mx.*

Syn. RANUNCULUS REPTANS. *β. Decand.*

A very delicate, creeping species. Stem round, filiform, sarmentose, sending out roots and leaves from the joints. Leaves linear, compressed, fleshy, obtuse. Flowers solitary. Calyx leaves roundish, obtuse, concave, spreading. Petals obovate, emarginate. Scale of the nectary elevated, adnate at the sides, forming a cavity underneath it.—Low grounds, Topsfield, Bartlett, New-Hampshire.—June, July.—Perennial.

Variety β. ovalis. Leaves oval and lanceolate. Petals from five to eight. Sent from Danvers by Dr. Nichols.

RANUNCULUS CYMBALARIA. *Ph.* *Sea Crowfoot.*

Stem sarmentose, leaves reniform-heart shaped, smooth, crenate; petals spatulate.

Stem sarmentose, filiform, round, smooth, putting out roots and shoots at the joints. Leaves radical, on long compressed petioles, reniform, toothed or crenate, very smooth. Scape round, two or three flowered, with spatulate, obtuse bractes. Calyx leaves smooth, ovate, acute, yellowish, spreading, at length reflexed. Petals spatulate, bright yellow. Nectary a small pit with its lower margin elevated. Fruit oblong. Seeds numerous, unequally ovate and acute.—Salt marshes, Chelsea, Cambridge.—Perennial.

RANUNCULUS ABORTIVUS. *L.* *Small flowered Crowfoot.*

Radical leaves heart-shaped, crenate; stem leaves ternate, angular; stem about three flowered. *L.*

This species is easily distinguished by its small flowers, and undivided, radical leaves. The leaves which grow from the root are heart or kidney shaped, crenate, the largest ones sometimes lobed. Stem leaves in threes or fives, at the base of each peduncle, nearly sessile, the upper ones lanceolate. Stems erect, smooth, few flowered. Flowers small, yellow. Calyx leaves obtuse, concave, a little shorter than the petals. Petals yellow, lance-ovate; nectaries tubular and emarginate, or funnel shaped and obliquely truncate. Seeds in a globular head, roundish, flat, tipped with the recurved style.—Woods.—May, June.—Perennial.

RANUNCULUS SCCELERATUS. *L.* *Celery leaved Crowfoot.*

Lower leaves palmate; uppermost in finger like divisions; fruit oblong.

A smooth, branching plant, with small flowers. Stem thick, round, and hollow. Lower leaves divided deeply, but not so far as the petiole, the segments toothed and lobed. Upper leaves sessile, divided to the bottom. Flowers numerous, on petioles of unequal length. Calyx pubescent, somewhat deflected. Petals small, concave, yellow. Seeds small, in a close, cylindrical head.—Grows in watery places.—June, July.—Perennial—It is very acrid, when fresh, and may be made to produce blisters.

RANUNCULUS FASCICULARIS. *Muhl.* *Early Crowfoot.*

Leaves ternate, subpinnate ; root fascicled.

An inhabitant of dry, rocky hills, flowering in April and May. The root consists of numerous fleshy divisions, among which are found dead portions of the last year's root, swollen like tubers, and frequently pierced through their whole length by the new or living roots. The leaves are pubescent, but have a smooth appearance. Those of the root grow on long stalks, and are ternate. Leaflets three lobed, remote, the terminal one deeply cleft, appearing like three distinct leaflets, so that the leaf has a pinnate form. Peduncles a little angular, hairy, narrow. Calyx spreading, hairy underneath, yellow inside. Petals longer than the calyx, transparent at base. Nectary a wedge formed, flat scale as wide as claw of the petal. Seeds smooth with an acuminate incurved point.—Perennial.

RANUNCULUS BULBOSUS. *L.* *Bulbous Crowfoot. Buttercups.*

Calyx reflexed ; flower stalks furrowed ; stem upright, many flowered ; leaves compound. *L.*

Very frequent among the grass in pastures, road sides, &c. The root is solid and fleshy, acrimonious and almost caustic. Stems erect, furnished with leaves, somewhat hairy. Leaves hairy, in three or five principal divisions, variously toothed and cut. Flower stalks upright and furrowed. Flowers of a bright, glossy yellow ; calyx leaves bent downward against the flower stalk, hairy. Petals roundish, wedge shaped. Nectary a roundish wedge formed scale, convex above and hollow underneath. Fruit in globular heads.—May and after.—Perennial.

RANUNCULUS ACRIS. *L.* *Tall Crowfoot.*

Calyx spreading ; flower stalks round and even ; leaves in three divisions with many segments, the upper ones linear.

Distinguished by its superior height, being usually about two feet high. Root fleshy, resembling the last, but smaller in proportion to the plant. Root leaves large, hairy, divided into three or five diverging lobes, which are again repeatedly subdivided, ending in acute segments and teeth. Petioles hairy,

especially at their ends. Uppermost leaves in three entire, linear segments. Stem erect, branching. Flower stalks round, not furrowed. Calyx spreading under the petals, not reflexed. Petals large, shining, yellow. Seeds in globular heads. This plant spreads rapidly, and is exceedingly troublesome in meadows and mowing ground. Being cut with hay it would no doubt be pernicious to cattle, were not its acrimony lost by drying. It flowers all summer.—Perennial.

RANUNCULUS REPENS. L. *Creeping Crowfoot.*

Calyx spreading; flower stalks furrowed; scions creeping; leaves compound. *L.*

The flowers of this and the two last are very similar, and confounded under the common name of Buttercups. An attention to the calyx and flower stalks readily distinguishes them. In this the leaves are mostly ternate, lobed and toothed, often marked with a light spot at their sinuses. The plant sends out long, prostrate stems or runners, which sufficiently distinguish it from the others. Flower stalks furrowed as in *Ranunculus bulbosus*, calyx spreading as in *Ranunculus acris*. Petals bright yellow, often emarginate.—Shady places.—Flowering all summer.—Perennial.

RANUNCULUS PENNSYLVANICUS. L. *Bristly Crowfoot.*

Rigidly hispid; stem erect; leaves ternate, trifid, cut and toothed; calyx reflexed; styles of the fruit straight.

A large, branching, small flowered species, covered throughout with stiff horizontal bristles. Petals yellow, not longer than the calyx. Fruit in oblong heads.—In woods and meadows.—June, August. The plant, intended by Pursh under this name, is probably a different species.

RANUNCULUS FLUVIATILIS. *White Water Ranunculus.*

Stem filiform, floating; leaves all immersed and capillary; petals five, oblong, remote.

Stem long, slender, round, smooth, jointed, hardly tubular, floating. Each joint gives off a leaf which is petioled, repeatedly ternate, and capillaceo-multipartite. There are usually two

roots, one on each side the petiole, and an axillary branch or leaf, or peduncle. Stipules oblong, clasping. Peduncles opposite to leaves, smooth, compressed, not furrowed. Calyx of five concave striate leaves. Petals five, oblong-wedge form, narrow, with spaces between them, white with a yellow base. Nectary a truncated tube.—In deep brooks.—July, August.—Perennial.

RANUNCULUS MULTIFIDUS. *Pursh. Yellow Water Ranunculus.*

Floating, leaves capillary, many-cleft, with axillary leaflets; peduncles opposite to bractes; petals from five to eight, obovate-wedge shaped.

Syn. RANUNCULUS FLUVIATILIS. Flor. Bost. 1st edit.

Stem floating, three or four feet long, round, smooth, tubular, a little branched at top, and sending out very long thread shaped roots from the lower joints. Leaves immersed, alternate, with short concave petioles, cleft into innumerable capillary, flattish segments, at first ternately, and afterward by forks. In the axil of each leaf is commonly a similar leaflet on a long petiole, or sometimes a small branch. Stipules thin, oblong, obtuse. Bractes oblong, sometimes three cleft, and now and then subdivided into linear segments like the leaves, but broader and shorter. Peduncles opposite to bractes, large, slightly furrowed. Calyx of five yellowish, obtuse, concave, caducous leaflets. Petals five, and often more, obovate-wedge shaped, yellow, shining, twice as long as the calyx and as large as *R. bulbosus*. Nectary ovate, concave, with erect edges. Seeds smooth, with conical, erect, recurved points.—Found in stagnant waters.—May, June.—Perennial.

This species was first described in the former edition of this work under the name of *R. fluviatilis*, of which it was then considered a variety. Mr. Pursh has since described in his supplement, under the name of *R. multifidus*, a plant found in Upper Louisiana, agreeing in most respects with this, and which, I am informed, on comparison of specimens, turns out the same. The *R. multifidus* of Rees' Cyclopaedia is a wholly different, Egyptian plant. Decandolle, who adopts Pursh's name for the American plant, applies the appellation, *R. Forskøehlii*, to the Egyptian species.

233. MAGNOLIA.

MAGNOLIA GLAUCA. L.

Small Magnolia.

Bigelow, Medical Botany, Pl. xxvii.

Leaves oval, glaucous underneath ; petals obovate, narrowed at base.

This I believe is the only species of its superb genus, which has been found native in New-England. The bark of the young twigs is of a bright-smooth green, with rings at the insertion and scars of the leaves. Leaves scattered, petioled, regularly elliptical, entire and glabrous. Their under side, except the midrib, is of a beautifully pale, glaucous colour, by which the tree may be distinguished at a distance. When young, this surface is covered with a silken pubescence. Flowers solitary, terminal, on a short, incrassated peduncle. Calyx of three spatulate, obtuse, concave segments. Corolla of from eight to fourteen obovate, obtuse, concave petals, contracted at their base. The stamens are very numerous and inserted in common with the petals on the sides of a conical receptacle. Filaments very short ; anthers linear, mucronated, two-celled, opening inwardly. Germs oval, collected into a cone, each one divided by a furrow, and tipped with a brownish, linear, recurved style. The fruit is a cone, consisting of imbricated cells, which open longitudinally from the escape of the seed. Seeds obovate, scarlet, connected to the cone by a thread, which suspends them some time after they have fallen out. It grows plentifully in a sheltered swamp at Gloucester, twenty-five miles from Boston, which is perhaps its northern boundary.—Flowers in July.—Bark aromatic and bitter.

234. LIRIODENDRON.

LIRIODENDRON TULIPIFERA.

Tulip Tree.

Bigelow, Medical Botany, Pl. xxxi.

Leaves lobed and truncated.

One of the noblest trees, both in size and beauty, of the American forest. The branches of the Tulip tree are of a greyish colour, inclining to red. The buds, which terminate them in winter are obovate, and flattened or compressed into a sharp edge at the extremity. These buds are made up of a number

of concentric sheaths, each of which contains a single miniature leaf between it and the next interior sheath, which is folded up and bent down upon one side of it. In the spring the sheaths swell to a large size before bursting, and then liberate the leaves one at a time, the remains of each sheath becoming converted into a stipule. The leaves are divided into four pointed lobes, and terminated by a shallow notch, the extremity being nearly square, and the middle rib ending abruptly as if cut off. In the large leaves the two lower lobes are furnished with a tooth or additional lobe on their outside. They are attached by long peduncles, and have a beautifully smooth and bright green surface. There is one variety of this tree which has the lobes of its leaves not pointed, but very obtuse. The flowers are large, solitary, and terminal. The outer calyx has two triangular leaves which fall off as the flower expands. The inner calyx consists of three large, oval, concave, veined leaves, of a pale green colour, spreading at first, but afterwards reflexed. Petals six, sometimes more, obtuse, veined, concave, of a pale yellowish green, marked with an irregular, indented crescent of bright orange, on both sides towards the base. Stamens numerous, with long linear anthers opening outwardly, and short filaments. Pistil a large conical, acute body, its upper half covered with minute, blackish, recurved stigmas; its lower furrowed, being a mass of coalescing styles and germs. The fruit is a cone of imbricated seed vessels, which are woody and solid, their upper portion formed by a long lanceolate scale. Seeds two, blackish, ovate, one or both often abortive.—Cultivated about Boston for ornament, and found native in the southern parts of Massachusetts and in Connecticut.—June.—The bark is aromatic.

Class XIV. DIDYNAMIA. Four stamens,
two long and two short.

Order I. GYMNOSPERMIA. Seeds naked.

A. Calyxes mostly five cleft.

235. GLECHOMA. Anthers approaching each other in pairs, each pair forming a cross.

236. MENTHA. Corolla nearly equal, four cleft; the broadest segment notched; stamens straight, distant.

237. HYSSOPUS. Lower lip of the corolla three parted, its middle segment crenate; stamens straight, distant.

238. TEUCRIUM. Corolla without any upper lip; stamens projecting through a fissure in the upper side of the tube; sides of the fissure divaricate.

239. LAMIUM. Upper lip of the corolla entire, vaulted; lower lip two lobed; throat toothed each side.

240. LEONURUS. Corolla with the upper lip erect, concave, undivided, hairy; lower lip three parted, with the middle segment undivided; stamens longer than the orifice.

241. STACHYS. Corolla with the lateral segments of the lower lip reflected at the side; stamens when old bent outwards.

242. GALEOPSIS. Upper lip of the corolla subcrenate, vaulted; lower lip two toothed above.

243. BALLOTA. Calyx funnel shaped, ten striate; upper lip of the corolla concave.

244. NEPETA. Corolla with the lower lip crenate; the orifice with a reflected margin; stamens approximate.

245. BRACHYSTEMUM. Tube of the corolla as long as the calyx; orifice without hairs; stamens nearly equal, very short, included in the corolla.

246. PYCNANTHEMUM. Tube of the corolla as long as the calyx; upper lip mostly entire; stamens distant, two as long as the upper lip, two shorter; heads with many bractes.

247. VERBENA. Calyx with one tooth truncated; corolla nearly equal, curved; stamens two or four; seeds two or four.

B. *Calyxes two lipped.*

248. CLINOPODIUM. Involucrum of many bristles, under the whorl; upper lip of the corolla flat, obcordate, straight.

249. SCUTELLARIA. Calyx furnished with a lid, which closes after flowering.

250. PRUNELLA. Filaments forked; one point of the fork bearing the anther; stigma cloven.

251. TRICHOSTEMA. Corolla with the upper lip falcated; stamens very long.

252. PHRYMA. Calyx cylindrical, the upper half longer and three cleft, lower half two toothed; upper lip of the corolla emarginate, the lower lip largest; seed one.

Order II. *ANGIOSPERMIA. Seeds in a Vessel.*

253. LINNÆA. Calyx double, one inferior, two leaved; the other superior, five leaved; corolla campanulate; berry dry, three celled.

254. MELAMPYRUM. Calyx four cleft; corolla personate, compressed at top; capsule two celled; seeds double, gibbous, smooth.

255. RHINANTHUS. Calyx ventricose, four cleft ; corolla ringent, the upper lip compressed ; capsule two celled, compressed, obtuse.

256. SCROPHULARIA. Calyx five cleft ; corolla somewhat globular, reversed ; the middle segment of the lip placed internally ; capsule two celled.

257. ANTIRRHINUM. Calyx five parted, corolla personate, with a prominent nectary underneath ; capsule two celled.

258. BARTSIA. Calyx two lobed, emarginate, coloured ; corolla smaller than the calyx, its upper lip longest ; capsule two celled ; seeds angular.

259. OROBANCHE. Corolla ringent ; capsule one celled, two valved, many seeded ; a gland under the base of the germ.

260. PEDICULARIS. Calyx five cleft ; corolla with the upper lip compressed and emarginate ; capsule two celled, oblique, pointed ; seeds few.

261. GERARDIA. Calyx five leaved ; corolla somewhat salver-shaped, two lipped ; lower lip three lobed, lobes emarginate, middle one two parted ; capsule two celled, bursting at base.

262. MIMULUS. Calyx prismatic ; corolla with the upper lip reflected at the sides ; capsule two celled, many seeded.

263. CHELONE. Calyx five leaved, corolla inflated, the lips closed ; rudiment of a fifth glabrous, filament between the upper stamens.

DIDYNAMIA.

GYMNOSPERMIA.

235. GLECHOMA.

GLECHOMA HEDERACEA. *L.* *Ground Ivy. Gill.*

Leaves reniform, crenate.

A creeping plant, usually found about fences or in shady places. Stems square, procumbent. Leaves opposite, petioled, heart or kidney shaped, crenate, hairy. Flowers in whorls, a few together. Calyx striated, ending in five unequal, pointed segments. Corolla blue, the upper lip straight, the lower expanded, three lobed, the middle lobe emarginate. Each pair of anthers meet, forming a cross. Ground ivy has a peculiar strong taste and smell, and possesses some medicinal reputation.—May, June.—Perennial.

236. MENTHA.

MENTHA BOREALIS. *Mich.* *Horsemint.*

Ascending, low, pubescent; leaves petioled, oval-lanceolate, acute at both ends; flowers in whorls, stamens projecting. *Mich.*

Inhabits the banks of rivulets and ditches. Stem square, hairy backwards. Leaves opposite, on downy petioles, oval, acute, serrate, the upper ones lanceolate. Flowers in regular, axillary whorls, on short peduncles. Corolla pale purple. Stamens twice as long as the corolla.—June, July.—Perennial. The taste and properties resemble those of Pennyroyal.

MENTHA VIRIDIS. *L.* *Spearmint.*

Spikes interrupted; leaves sessile, lanceolate, acute, naked; bractes setaceous, and, with the calyx teeth, somewhat hairy. *Sm.*

This well known mint spreads rapidly by its creeping roots in moist places. Stems erect, smooth, acute-angled. Leaves sessile, lanceolate, acute, serrate, smooth. Spikes long, acute,

consisting of distinct, remote whorls. Pedicels glabrous. Flowers purple. The whole plant has a pleasant, aromatic flavor, well known.—Flowers in August.—Perennial.

237. HYSSOPUS.

HYSSOPUS NEPETOIDES. *L.**Tall Hyssop.*

Spikes formed of whorls, cylindrical, leaves subcordate, ovate, dentate, acuminate.

One of our tallest labiate plants. Stem large, square, smooth, three to six feet high. Leaves opposite, with large teeth. Corollas small, pale purple, with exserted stamens and styles. Woods, Chelsea beach island.—July.—Perennial.— The characters of *H. scrophularifolius* and *H. nepetoides* are blended in this plant, and I am convinced with Mr. Eaton that they are probably varieties.

238. TEUCRIUM.

TEUCRIUM CANADENSE.

Wild Germander.

Stem herbaceous, erect; leaves lanceolate serrate, whitish underneath; spike crowded, many flowered, long. *Mich.*

Stem erect, square, downy, a foot or more height. Leaves opposite, soft with fine down, lanceolate, acute, serrate.* Spike formed of small whorls of flowers, furnished with short bractes. Calyx downy, its segments rather blunt. Corolla pale red, the stamens issuing from a fissure in the upper side.—Road side, Cambridgeport.—July.—Perennial.

239. LAMIUM.

LAMIUM AMPLEXICAULE. *L.**Henbit.*

Floral leaves sessile, clasping, obtuse.

Not larger than *Glechoma hederacea*. Leaves opposite, roundish, heart shaped or reniform, crenate and cut, the upper ones clasping. Calyx hairy. Corolla red, or white.—Naturalized in cultivated ground.—May.—Annual.

240. LEONURUS.

LEONURUS CARDIACA. *L.**Motherwort.*

Upper leaves lanceolate, three lobed or entire. *Sm.*

A common plant among rubbish and about walls. Stem two or three feet high, large, square, downy. Lower leaves lobed and broad, the upper ones narrower, the highest of these lanceolate, entire; all of them spreading or bent downwards, downy underneath. Flowers in many whorls. Calyx teeth rigid and prickly; corolla hairy without, variegated with white and red within. The herb has a strong, pungent odour, and is a popular remedy in considerable request.—July.—Perennial.

241. STACHYS.

STACHYS ASPERA. *Mich.* *Hedge Nettle. Woundwort.*

Stem erect, hairy backward; leaves somewhat petioled, lanceolate, sharply serrate; spike of whorls which are about six flowered; calyx with firm prickles. *Mich.*

Stem square, a foot high, the angles furnished with reflexed hairs. Leaves lanceolate, serrate, somewhat heart shaped at base, the upper surface and nerves underneath covered with hairs. Flowers in whorls, constituting a leafy, terminal spike, red. Calyx teeth prickly. Stamens in the old flowers bent outward, forming an angle over the edge of the corolla.—Road sides, Chelsea, Brighton.—June, July.—Perennial.

242. GALEOPSIS.

GALEOPSIS TETRAHIT. *L.* *Common Hemp Nettle.*

Stem hispid, internodes thickened at top; corolla twice as long as the calyx; its upper lip straight.

Stem square, a foot or more high, swelling below the joints, bristly. Leaves ovate, serrate, hispid. Calyx hispid and prickly. Upper lip of the corolla concave, extended, purple, lower lip trifid, variegated.—Naturalized in waste grounds.—July, August.—Annual.

GALEOPSIS LADANUM. *L.* *Red Hemp Nettle.*

Stem hairy, internodes equal; leaves lanceolate, subserrate, hairy; upper lip of the corolla obsoletely crenate.

Smaller than the preceding. Stem branched and of uniform thickness. Leaves ovate-lanceolate, entire or serrate, marked with deep veins. Calyx hairy with prickly teeth. Corolla variable, red, white, or variegated.—On Chelsea beach.—July.—Annual.

243. BALLOTA.

BALLOTA NIGRA. *L.**Black Horehound.*

Leaves ovate, undivided, serrate; calyx dilated above, subtruncate, with spreading teeth.

Two or three feet high and universally pubescent. Leaves ovate, a little cordate. Whorls axillary. Calyx infundibuliform, ten ribbed. Corolla purple or white.—At Hull.—July.—Perennial.

244. NEPETA.

NEPETA CATARIA. *L.**Catmint or Catnep.*

Flowers spiked; the whorls slightly pedunculated. Leaves on footstalks, heart shaped, tooth serrated. *Sm.*

This well known plant grows every where in dry soils, about fences and buildings. Its name is derived from the great partiality of cats for the odour of the plant. Stem two or three feet high, square and downy. Leaves long-heart shaped, serrate, pale underneath, covered with soft down. Calyx ribbed. Corolla tubular, upper lip straight, lower lip with the middle lobe spreading, crenate, elegantly dotted.—July.—Perennial.

245. BRACHYSTEMUM.

BRACHYSTEMUM VIRGINICUM. *Mich.**Virginia Thyme.*

Stem erect, somewhat pubescent; leaves lanceolate or linear, entire, smooth; heads somewhat fascicled. *Mich. abr.*

Syn. THYMUS VIRGINICUS. L.

An erect plant with fastigiate branches. Stem square, downy at the angles. Leaves opposite, rigid, very narrow, rounded at base, and tapering to a long, acute point. Under a magnifier they appear covered with fine, black dots. Flowers in numer-

ous small heads, mostly terminal. Calyxes downy. Corollas white, dotted with purple. Taste like pennyroyal.—By fences and woods.—July, August.—Perennial.

246. PYCNANTHEMUM.

PYCNANTHEMUM INCANUM. *Mich.* *Wild Basil.*

Stem pubescent; leaves petioled, oval, acuminate, serrate, white-downy; heads compound, terminal and lateral; bractes setaceous. *Mich. abr.*

Syn. CLINOPODIUM INCANUM. L.

A white looking plant, covered with soft down. Stem one or two feet high, covered with soft down, especially toward the top. Leaves oval, pointed, with a few remote serratures on the sides, soft and velvet-like, white underneath. Flowers on white. branching footstalks, in lateral and terminal whorls or heads, Bractes numerous, white, the inner ones setaceous. Corollas projecting, pale, spotted with purple.—Woods and mountains.—July, August.—Perennial.

PYCNANTHEMUM ARISTATUM. *Mich.* *Wild Basil.*

Whitish; leaves lance-oval, somewhat serrate, on short petioles; whorls and terminal head sessile; bractes linear, awned. *Mich. abr.*

Syn. NEPETA VIRGINICA. L.

Stem erect, a foot or more in height, downy. Leaves opposite, ovate, acuminate, slightly serrate, dotted under a magnifier, the upper ones hoary with white down. Each branch has one or two downy, sessile whorls, and a terminal head. Bractes acuminate with a sort of awn. Flowers small. Both these species have a strong, pungent taste, much like pennyroyal.—Chelsea, road side.—July, August.—Perennial.

247. VERBENA.

VERBENA HASTATA. *L.* *Common blue Vervain.*

Leaves lanceolate, serrate, acuminate, the lower ones lobed; spikes erect, filiform, panicled; stamens four.

A tall, shewy plant, common by road sides in low ground. Stem three or four feet high. Leaves opposite, rough, sharply serrate, tapering to a long point; the lower ones broader, with commonly a lobe on each side at base, giving them somewhat a hastate form. Spikes numerous, erect, slender. The flowering commences at their base, and is long in reaching their summit. Flowers close, of a dark purplish hue, with four stamens.—July, September.—Perennial.

VERBENA URTICIFOLIA. *L.* *Nettle leaved Vervain.*

Leaves oval, serrate, acute, petioled; spikes divergent, filiform, paniced; stamens four.

Common among rubbish, about fences and buildings. Stem erect, two or three feet in height. Leaves broad, oval or ovate, rough, undivided. Panicles of long, very slender, flexile spikes, diverging or divaricated, with distinct, somewhat remote flowers, not imbricate like the last. Flowers small, white. A weed of no beauty.—July, August.—Perennial.

248. CLINOPODIUM.

CLINOPODIUM VULGARE. *L.* *Wild Basil.*

Whorls hispid; bractes setaceous; pedicels branched; leaves obsoletely serrate.

Stem hairy, obtusely quadrangular. Leaves ovate, rather obtuse, slightly serrate and hairy. Flowers in terminal and axillary whorls with hairy stalks and narrow hairy involucre. Calyx nerved, hairy; corolla purplish.—Woods, Windsor, Vt.—July.—Perennial.

249. SCUTELLARIA.

SCUTELLARIA LATERIFLORA. *L.* *Side flowering Scullcap.*

Leaves smooth, rough on the keel; racemes lateral, leafy. *L.*

Stem square, branching. Leaves on petioles of considerable length, ovate, acute, toothed, mostly smooth. Racemes on long, axillary stalks. Flowers small, blue, numerous, interspersed with small leaves. The singularity of this genus consists in the form of the calyx, which is furnished with a ridge on the upper side, the part beyond this serving as a lid. After the corolla

falls this lid shuts down against the opposite side, so as perfectly to inclose the seeds. By lateral pressure the lid opens, discovering the four seeds within.—Meadows.—July.—Perennial.

SCUTELLARIA GALERICULATA. *L.* *Common Scullcap.*

Leaves cordate-lanceolate, crenate, wrinkled; flowers axillary.

A foot high with a square, branching stem. Leaves slightly petioled. Flowers larger than in the preceding, blue, projecting in pairs, one from each axil of the opposite leaves. Calyx closed like the foregoing.—Meadows.—July.

250. PRUNELLA.

PRUNELLA VULGARIS. *L.* *Self Heal.*

Leaves petioled, ovate-lanceolate, toothed; upper lip of the calyx truncated, three awned; stem ascending.

Syn. PRUNELLA PENNSYLVANICA. *1st edit.*

A handsome plant, native of meadows and moist pastures. Stem nine or ten inches in height, hairy. Leaves opposite, broad-lanceolate, slightly toothed, their nerves and petioles hairy, the upper pair close to the spike and sessile. Spike short, ovate. Bractes reniform, ciliate, acuminate. Flowers ringent, purplish. Calyx two lipped, the upper lip broad and abrupt, with three straight, short bristles or awns; the lower lip ending in two acute teeth. Upper lip of the corolla arched, lower lip three lobed, the middle lobe fringed.—July, August.—Perennial.

This plant agrees exactly with European specimens, and I am now doubtful whether *P. Pennsylvanica* of Willdenow be any more than a variety.

251. TRICHOSTEMA.

TRICHOSTEMA DICHOTOMA. *L.* *Trichostema.*

Stamens very long, exerted. *L.*

An annual plant, remarkable for its long, arching stamens. Stem round, somewhat four sided, hairy. Branches opposite, subdivided in a brachiate manner, their last divisions commonly,

though not always, dichotomous. Leaves oval-lanceolate, obtuse, entire. Flowers numerous, terminal. Calyx swelling, its upper lip of two short, acute teeth; lower lip twice as long, three toothed. Corolla purple, with two long, slender stamens projecting from one side and arching over to meet the other. Seeds with an indented surface. In sandy pastures and hills.—August.—Annual.

252. PHRYMA.

PHRYMA LEPTOSTACHYA. L.

Lopseed.

Leaves ovate, toothed, petioled; spikes terminal, slender; flowers opposite.

Remarkable for its slender spikes of reflexed fruit. Stem two or three feet high. Leaves large, ovate, acutè, largely toothed. Spikes virgated, on long slender stalks. Flowers small, opposite, nearly sessile, purplish. Upper lip of the calyx with three very long, subulate teeth with the tips at length reflexed. In fruit the calyx shuts up and bends backward into close contact with the peduncle.—Chelsea beach island.—July.—Perennial.

ANGIOSPERMIA.

253. LINNÆA.

LINNÆA BOREALIS.

Linnæa.

Stem prostrate; flowering branches erect, two flowered; leaves roundish, crenate.

Stem creeping, woody, with a brownish, pubescent bark, giving off roots and branches at regular intervals. Leaves opposite, petioled, hairy with a glabrous appearance, suborbicular, acute at base, with about five obtuse teeth. Peduncles filiform, covered with very minute, glandular hairs, two flowered. Bractes two, linear, opposite. Flowers very fragrant, drooping, with two calyxes, one inferior, four leaved, two of the leaves minute; the other superior, five parted. Corolla campanulate, five cleft, red, tinged with white, the inside red and hairy. Stamens shorter than the corolla. Style declined.

This interesting and delicate plant is common to the northern parts of both hemispheres.—Woods, Lynn.—Often met with in New Hampshire and Vermont.—June.

254. MELAMPYRUM.

MELAMPYRUM AMERICANUM. *Mich.**Cow-Wheat.*

Leaves linear-lanceolate, the uppermost with a few setaceous teeth at base ; flowers axillary.

Pretty common in woods. Stem erect, branching, less than a foot in height. Leaves opposite, lanceolate or ovate, smooth, entire, with a long obtuse point, the upper ones furnished with several bristle-like teeth at base. Flowers axillary, whitish, slender, the lower lip yellow on the inside. Capsules flat, acute, pointing downward, containing four seeds.—June, July.—Annual.

255. RHINANTHUS.

RHINANTHUS CRISTA GALLI.

Yellow Rattle.

Upper lip of the corolla vaulted ; calyx smooth ; leaves lanceolate, serrate.

About a foot high, branching and smooth. Leaves opposite, cordate, lanceolate, acutely serrate, rough. Calyx large, inflated, compressed, nerved and reticulated, contracted at the mouth. Corolla yellow, much longer than the calyx, the upper lip curved, the lower three cleft. In meadows, at Plymouth, Mass. abundant.—July.—Annual.

256. SCROPHULARIA.

SCROPHULARIA MARILANDACA. *L.**Figwort.*

Leaves cordate, serrate, acute, rounded at base ; stem obtuse-angled. *L.*

A tall, erect plant with flowers resembling capsules. Stem square with bluntish corners, smooth except at the joints, where there is a slight pubescence between the petioles. Leaves opposite, ovate-oblong, obtuse at base, tapering to an acute point, serrate. Panicle erect, with opposite branches. Flowers small, somewhat globular. Calyx teeth obtuse, appressed. Corolla greenish outside, of a dark brown within, divided into five unequal, rounded segments, the shortest of which is reflexed. Stamens declined. Style bending over the short segment of the

corolla. Between the two upper segments is a small, internal prominence which may be mistaken for a fifth stamen, at the base of which the honey is situated. Capsule globular, tipped with a style.—Chelsea beach island.—August.—Perennial.

257. ANTIRRHINUM.

ANTIRRHINUM LINARIA *L.**Toad Flax.*

Leaves linear-lanceolate, crowded; stem erect; spikes terminal, sessile; flowers imbricate. *L.*

The yellow spikes of this plant are very common by roadsides, though it is not probable, that the species is indigenous. Stem one or two feet high, nearly smooth. Leaves numerous, narrow, and pointed, smooth. Branches numerous, axillary, bearing tufts of leaves. Spike long, crowded with yellow flowers, the corolla furnished with a long, hollow spur below. The mouth is closed with a protuberant palate from the under lip, and gapes open upon lateral pressure, a character which has given the genus the name of *Snap dragon*.—July, August.—Perennial.

ANTIRRHINUM CANADENSE. *L.**Canada Snap Dragon.*

Leaves alternate, linear, remote, glabrous; flowers racemed; stem simple; scions procumbent. *Willd.*

A slender, annual plant, seldom exceeding a foot in height. Stem erect, smooth. Leaves small, scattered, erect, linear, obtuse. Flowers in a loose, terminal raceme, small, blue. Upper lip of the corolla reflexed, the lower much larger, spreading, with a white centre and three roundish, blue lobes. Spur filiform, acute. Some leafy, procumbent scions occasionally proceed from the root.—Road sides.—July, August.

258. BARTSIA.

BARTSIA PALLIDA. *L.**Pale Bartsia.*

Leaves alternate, linear, undivided, the upper ones lanceolate, the floral ones subovate, slightly toothed at the end, all three nerved; calyx teeth acute. *Willd.*

Stem ascending, furrowed, pubescent. Leaves alternate, ses-

sile, lanceolate, three or five nerved, nearly smooth. Bractes straw coloured, oblong-ovate, five nerved, with a tooth or two at the end. Flowers straw coloured. Calyx two cleft, the divisions emarginate. Corolla pubescent, its upper lip long and tapering, entire; lower lip short, three cleft. Style longer than the stamens.—On the barren summits of the White mountans.—August.—Perennial. It also inhabits Siberia.

§ *Subgenus*, CASTILLEJA. *Upper lip of the corolla very long; anthers cohering.*

BARTSIA COCCINEA. L.

Painted Cup.

Leaves alternate, linear, cut-pinnatifid with linear segments; bractes dilated, mostly three cleft, longer than the flowers; calyx teeth obtuse.

Syn. EUCHROMA COCCINEA. Nutt.

Stem reddish, pubescent, angular. Leaves alternate, sessile, pinnatifid with a few long, linear segments. Flowers in a terminal spike. The bractes, which constitute the chief beauty of this plant, are three or five cleft, the segments oblong, obtuse, and of a bright scarlet colour at top. Calyx tubular, two cleft, the segments truncate, slightly emarginate, yellowish, tipped with scarlet. Corolla dull yellow, tubular, with two oblong lateral pits at base; its lower lip very short, curved, with three small ovate lobes; upper lip straight, somewhat truncate. Stamens as long as the upper lip. Germ ovate, style filiform, projecting, incurved; stigma capitate.—Wet meadows near Fresh pond.—June.

259. OROBANCHE.

OROBANCHE UNIFLORA. L. *Single flowered Broomrape.*

Scapes in pairs, naked, one flowered.

Syn. OROBANCHE BIFLORA. Nutt.

As the part of this plant which appears at sight is one flowered, I have preferred retaining the Linnæan name. At the top of the root is a short stem or caudex, sometimes nearly wanting and sometimes several together, clothed with a few obtuse scales, and producing each two scapes. These are simple, erect, hairy, leafless. Calyx hairy, erect, one leafed, parted half way

down into five acute segments. Corolla tubular, striated, hairy, incurvated, of a purplish white colour, its mouth divided into five roundish segments, its tube furnished on the under side with two yellow lines which are prominent and hairy within. Stamens crossing. Germ oval, surrounded with a gland or flat ring at base. Style straight; stigma reflexed.—Woods, Waltham; parasitic?—June, July.

§ *Subgenus* EPIFAGUS. *Flowers polygamous, capsule opening on one side.*

OROBANCHE VIRGINIANA. L.

Beech Drops.

Stem branching; flowers alternate, remote; corollas deciduous, four toothed.

Syn. EPIFAGUS AMERICANUS. Nutt.

A parasitic plant, said only to be found attached to the roots of the Beech tree. Root fleshy and scaly. Stem a foot high, branched, leafless, with small ovate scales. Flowers alternate, remote, small. The fertile corollas, according to Mr. Nuttall, are deciduous in consequence of the obliquity and rapid enlargement of the germ; the barren ones larger, white striped with purple.—In Beech woods, Maine. I have not seen it near Boston.—August.

260. PEDICULARIS.

PEDICULARIS CANADENSIS. L.

Lousewort.

Stem simple, spike somewhat leafy; helmet of the corolla with two setaceous teeth; calyx truncated downward. L.

Stem erect, under a foot in height, downy at top. Leaves dark green, lanceolate, with crenate lobes, obtuse. Spike terminal, short, crowded, leafy. Calyx cut off in an oblique direction downward. Corolla yellowish, the upper lip forming a long helmet, its point square, with a small, acute tooth on each side; lower lip three lobed. The flowers turn to the right, so that the spike has a twisted appearance.—Pastures.—May.—Perennial.

261. GERARDIA.

GERARDIA FLAVA. *L.**Yellow Gerardia.*

Pubescent; stem nearly simple; leaves sessile, lanceolate, entire or toothed and cut; flowers subsessile.

One of the most showy of our wild wood flowers. Stem erect, one or two feet in height, pubescent. Leaves opposite, the lower ones more or less pinnatifid and cut, the upper ones lanceolate, entire or serrate, obtusely pointed. Spike terminal, few flowered. Flowers opposite, trumpet shaped, large, yellow. Peduncles short, downy. Stamens somewhat woolly; anthers with two points at the base. Style slender, longer than the stamens. The whole plant turns black in drying.—Woods.—August.—Perennial.

GERARDIA GLAUCA. *Eddy.**Tall Gerardia.*

Glabrous; stem panicled; leaves petioled, pinnatifid, paler beneath, the upper ones lanceolate; flowers pedicelled.

Syn. GERARDIA QUERCIFOLIA. Pursh.

A taller and handsomer plant than the last, which it greatly resembles, so that it might pass for a cultivated variety. The stem is smooth and more branched, leaves petioled and pinnatifid, flowers pedunculate. In other respects it resembles the last species.—Woods.—August.—Perennial.

GERARDIA PEDICULARIA. *L.**Bushy Gerardia.*

Leaves oblong, twice serrate; stem panicled, calyxes crenate. *L.*

A tall, bushy plant, which would be one of the most ornamental, were not its flowers very perishable, and deciduous. Stem erect, with numerous, opposite branches. Leaves pinnatifid, with serrate lobes. Peduncles hairy. The structure of the flowers is very elegant. The calyx ends in five spreading leaflets, indented on their margin. Corolla yellow, downy without, trumpet shaped, with spreading lobes. Stamens crossing, the two longer filaments with loose hairs on their inner side. Anthers hairy, dependent, two lobed, the lobes ending in setaceous points. Style longer than the stamens. The leaves and

flowers turn black in drying.—Dry woods.—Very common at Sweet Auburn, Cambridge.—August.—Perennial.

GERARDIA PURPUREA. L.

Purple Gerardia.

Stem with many opposite branches; leaves narrow-linear; flowers scattered, purple, sub-sessile. *Mich.*

An annual species, much smaller than the preceding. Stem erect, smooth, branching. Leaves opposite, linear, entire, roughish, curling when the plant droops. Flowers purple, opposite, on very short peduncles. Calyx teeth acute and separated by acute sinuses. Corolla purple, usually without spots on the inside. Stamens woolly; anthers sagittate.—Common in pastures and road sides in moist ground.—August.—Annual.

GERARDIA MARITIMA. Nutt.

Salt Marsh Gerardia.

Leaves linear, fleshy; calyx truncate, upper segments of the corolla fringed.

Syn. GERARDIA PURPUREA, β . CRASSIFOLIA. Pursh.

Stem smooth, with opposite branches. Leaves linear-lanceolate, obtuse, fleshy, veinless, dotted under a magnifier. Flowers axillary and terminal on elevated peduncles. Calyx smooth, its segments ending abruptly as if cut off. Corolla purple, dotted inside toward the base, its two larger segments ciliate. Stamens hairy; anthers sagittate. Capsule globose.—On salt marshes.—July, August.—Perennial.—Resembles *G. purpurea*, but is smaller and more fleshy. The truncate calyx is an un-failing mark of distinction.

GERARDIA TENUIFOLIA.

Stalked Gerardia.

Branching, leaves linear, flowers axillary on stalks longer than themselves.

Stem erect, smooth with opposite branches. Leaves linear, entire, rough, curled in drying. Flowers opposite on long filiform peduncles. Calyx teeth short, acute, separated by obtuse sinuses. Corolla subcampanulate, purple, spotted inside. Stamens woolly, anthers sagittate.—Low grounds, Cambridgeport.—August, September.—Annual.—Resembles *G. purpurea*.

262. MIMULUS.

MIMULUS RINGENS. *L.**Monkey Flower.*

Leaves lanceolate, acuminate, glabrous, sessile; peduncles longer than the flower. *Willd.*

A handsome plant, fond of wet soils, where it attains the height of two feet and upward. Stem erect, smooth, angular. Leaves opposite, closely sessile, ovate-lanceolate, serrate, acute. Peduncles axillary, quadrangular, curving upward. Calyx tubular, with five acute angles and as many pointed teeth. Corolla twice as long as the calyx, pale purple with the palate yellow, upper lip reflexed at the sides, lower lip much larger, irregularly three lobed. Lower stamens longer than the upper. Style clavate; stigma bifid, membranous.—July, August.—Perennial.

263. CHELONE.

CHELONE GLABRA. *L.**Snake-Head.*

Glabrous; leaves oval or lanceolate, unequally serrate; flowers spiked. *Mich.*

Found in brooks and wet ground, where it forms bunches, and rises two or three feet. Stem smooth, bluntly four cornered. Leaves opposite, lanceolate, acuminate, dark green and polished above. Flowers in a terminal spike, a few only expanding at once. Calyx nearly sessile, with five short, rounded segments, calyculated with three similar scales at base. Corolla large, white, inflated, contracted at the mouth, not unlike the head of a serpent; the lower lip in three small segments, with two woolly stripes within. Filaments hairy below. Anthers entangled together by a woolly covering. A short, smooth rudiment of a fifth filament is found between the two upper stamens. Style long, slender, curving downward.—Roxbury, Cambridge.—August, September.—Perennial.

Class XV. TETRADYNAMIA. *Six stamens, four long and two short.*

Order I. SILICULOSA. *Seeds in a silicle.*

264. DRABA. Silicle entire, oval-oblong, the valves flat, parallel to the dissepiment.

265. LEPIDIUM. Silicle elliptic, emarginate, the valves carinate, but not margined.

266. THLAPSI. Silicle inversely heart shaped, the valves carinate and margined.

267. BUNIAS. Silicle deciduous without opening, somewhat four sided, two of its angles more acute.

Order II. SILIQUOSA. *Seeds in a silique.*

268. ARABIS. Silique compressed. Four nectariferous glands like scales, reflected between the leaves of the calyx.

269. RAPHANUS. Silique cylindrical, swelling at the seeds, somewhat jointed.

270. CARDAMINE. Silique bursting elastically, the valves revolute, and equal to the partition.

271. SISYMBRIUM. Silique cylindrical, opening with nearly straight valves; valves equalling the partition.

272. ERYSIMUM. Calyx closed; stigma capitate; silique columnar, square.

273. SINAPIS. Calyx spreading; silique cylindrical, with the partition longer than the valves.

274. DENTARIA. Silique opening elastically, the valves revolute; stigma emarginate; calyx connivent.

275. CLEOME. Petals all ascending; glands three, one at each sinus of the calyx except the lowest; germ stipitate; silique one celled, two valved.

TETRADYNAMIA.

SILICULOSA.

264. DRABA.

DRABA VERNA. L.

Whitlow Grass.

Scape naked ; leaves oblong, acute, subserrate, hairy ; petals bifid ; stigma sessile.

A small, very early, white flowering plant. Leaves all radical. Scape two or three inches high with a raceme of small flowers. Calyx spreading ; petals half cleft. Pod oval, flat.—Among the grass in fields, &c. in the southern parts of the state. Not seen near Boston.—April, May.

265. LEPIDIUM.

LEPIDUM VIRGINICUM. L.

Wild Cress or Peppergrass.

Radical leaves pinnatifid ; stem leaves linear-lanceolate, serrate ; flowers with four petals and two stamens ; silicle lenticular. *Mich abr.*

Syn. THLASPI VIRGINIANUM. Poir.

Frequent by road sides, flowering during most of the summer and autumn. Stem woody and branching, round, smooth. Branches numerous, alternate. Leaves of the root pinnatifid, of the stem lanceolate, glabrous, furnished with a remote tooth or two. Racemes terminal, long, naked. Pedicels capillary. Flowers very small, diandrous, white. Silicles flat, orbicular, with a deep notch in the end. Taste like common Garden cress or peppergrass.

266. THLASPI.

THLASPI BURSA PASTORIS. L.

Common Shepherd's Purse.

Hairy, silicle inversely heart shaped, somewhat triangular ; radical leaves pinnatifid. *Sm.*

Equally common with the last, in pastures and road sides, continuing to flower during most of the vegetating season. Stem branching, round. Root leaves numerous, spreading, pinnatifid, toothed, somewhat hairy. Stem leaves oblong, toothed, arrow

shaped at base, closely sessile. Flowers small, white. Silicle smooth, inversely heart shaped, crowned with the short style.—Annual.

267. BUNIAS.

**BUNIAS EDENTULA*. *Flor. Bost. 1st edit. American Sea Rocket.*

Bunias foliis obovatis, sinuatis; siliculis glabris, articulis binis, monospermis, edentulis.

Leaves obovate, sinuate; silicles with two smooth, one seeded, toothless joints.

Syn. CAKILE AMERICANA. Nutt.

A fleshy, maritime plant, found on various parts of the sea coast. Stem glabrous, flexuous, deeply and irregularly furrowed, very much branched. Leaves fleshy, smooth, obovate, toothed and sinuated, caducous. Branches axillary, leafy. Spikes or racemes terminal. Flowers on short, fleshy peduncles. Calyx of four erect, fleshy segments. Petals spreading, rounded at the end. Stamens nearly equal, longer than the calyx. Stigma concave. Silicles smooth, roundish, consisting of two one seeded joints, the lower one somewhat globular, without teeth or prominences, marked on each side with a longitudinal, depressed line, sometimes abortive. Upper joint ovate, round, marked on each side with an elevated line, terminating in a flat, emarginate, or three toothed beak. Seeds facing different ways. The silicle is drupaceous, and in drying becomes quadrangular. The plant is succulent and heavy.—Grows abundantly at Cape Ann. Found also at South Boston.—July.—Annual.

SILIQUOSA.

268. ARABIS.

ARABIS FALCATA. Mx.

Sickle Pod.

Leaves lanceolate, remotely toothed, sessile; siliques pendulous, two edged, falcate.

Stem two or three feet high, round, smooth. Leaves sessile, mostly lanceolate with a few remote teeth; the lower ones sometimes sagittate and clasping. Raceme terminal. Flowers very small, white. Pods long and curved, resembling a crooked

sword blade, articulated to a knob at the end of the pedicel, acute, flat, pendulous.—Woods, Chelsea beach island.—August.

ARABIS RHOMBOIDEA.

Rhomboidal Arabis.

Leaves smooth, rhomboidal, repand, or obsolete to toothed, the lower ones on long petioles; root tuberous.

Root tuberous and farinaceous. The leaves which spring from the root are generally heart shaped, the lower stem leaves oblong or ovate, repand, obtuse, smooth; the upper ones becoming quite narrow. Flowers white, in a terminal raceme. Peduncles smooth, slender. Calyx of four erect, obtuse leaves. Petals roundish, unguiculate. Anthers sagittate with microscopic glands at the base of the filaments.—Wet Meadows, Roxbury.—May.—Perennial.

269. RAPHANUS.

RAPHANUS RAPHANISTRUM. *L.*

Wild Radish.

Pods round, jointed, smooth, of one cell. *L.*

A hardy weed, frequent in the gravel by road sides, but most troublesome in cultivated fields. Stem branching, round, bristly, glaucous. Leaves rough, lower ones lyrate, upper ones toothed. Calyx bristly. Petals spreading, yellow, turning white as they grow old, not unfrequently of a light blue. Pods erect, knobbed, tapering, smooth, ending in a long beak. When dry, they are striated, and abruptly contracted between the cells, which are hard and somewhat bony. On cutting the pod across between the seeds, it appears two celled. The seeds however are contained between the laminæ of the apparent partition.

270. CARDAMINE.

CARDAMINE ROTUNDFOLIA? *Mx.* *Round leaved Cardamine.*

Leaves simple, suborbiculate, entire; stems simple, weak, procumbent.

Cæspitose. Stems ascending, branched. Leaves ovate, obtuse, submucronated, smooth, on long petioles. Flowers fascicled or corymbed. Calyx leaves oblong, obtuse, spreading. Petals oval, subacute. Filaments subulate, hollow above. Capsule linear.—On the highest summit of the White mountains.—July.

CARDAMINE PENNSYLVANICA. *Muhl. American Water Cress.*

Smooth, branching ; leaves pinnate, leaflets roundish-oblong, obtuse, angular, toothed ; siliques erect.

Found in brooks and ponds, growing under water, except its upper leaves and flowers. Leaves alternate, smooth, pinnate ; leaflets oblong, rounded at the end, with a few large teeth on each side, the terminal leaflet much exceeding the rest in size. The leaflets in the upper leaves are entire. Flowers small, white. Pods narrow, erect, an inch or more in length.—Brighton.—May.

CARDAMINE VIRGINICA? *L. Virginian Cress.*

Smooth, erect ; leaves pinnate, leaflets spatulate, obtuse ; siliques erect.

Found on dry hills, much smaller than the preceding. Leaflets oblanceolate, lower ones obovate, some of them with a tooth on one side ; ciliate under a magnifier. Flowers white.—May.

271. SISYMBRIUM.

SISYMBRIUM AMPHIBIUM. *L. Amphibious Cress.*

Siliques declined, oblong-ovate ; leaves oblong-lanceolate or pinnatifid, serrate ; petals larger than the calyx.

Stem erect, furrowed, hairy when out of water. Leaves hairy clasping at base, lyrate or pinnatifid, toothed. Flowers in terminal racemes, small, yellow. Fruit oblong-oval, swelling, compressed, obtuse at both ends, tipped with the style, supported by slender, spreading pedicels.—Ponds and wet places, the lower leaves sometimes capillary.—July.—Perennial.

272. ERYSIMUM.

ERYSIMUM OFFICINALE. *L. Hedge Mustard.*

Pods pressed close to the main stalk ; leaves runcinate. *L.*

The whole plant is more or less hairy, and attains the height of about two feet. Stem round ; branches given off at a large angle, and curving. Leaves lyrate-runcinate. The fruitful branches are long and slender, covered with close, sessile pods,

and ending in yellow flowers.—About rubbish and cultivated ground.—All summer.—Annual.

273. SINAPIS.

SINAPIS NIGRA. *L.**Common Mustard.*

Pods smooth, four cornered, pressed close to the raceme; upper leaves linear-lanceolate, entire, smooth. *Sm.*

Very common in cultivated and waste grounds; usually regarded as a weed, though its seeds furnish the common table mustard. Stem round, striated, smooth, three or four feet high, branching. Leaves variously lobed and toothed, the lower ones rough, upper ones smooth, deflexed, the highest narrow, small, entire. Flowers numerous and showy. Calyx and corolla yellow. Pods erect, close to the stalk, quadrangular, ending in a short beak.—June, July.—Annual.

274. DENTARIA.

DENTARIA LACINIATA. *Willd.**Toothwort.*

Leaves three, three parted, the divisions linear-oblong, cut-toothed; root moniliform.

Syn. DENTARIA CONCATENATA. Mx.

Root formed of a string of tubers. Stem about a foot high, giving off three leaves near together at its upper part. These are deeply divided into three segments or leaflets which are oblong, divergent, cut and toothed. Flowers large, purplish, in a terminal raceme.—Woods, Hampshire.—June.—Perennial.

275. CLEOME.

CLEOME DODECANDRA. *L.**Cleome.*

Leaves ternate, elliptical; flowers axillary, solitary, dodecandrous.

A viscid, strong scented plant. Stem branching, pubescent and glutinous. Leaves petioled, ternate; leaflets oblong-spatulate, smooth. Flowers racemed, white, with ten or a dozen stamens. Pods lanceolate, turgid, hairy and viscid, two valved without a dissepiment.—On the shores of lake Champlain, near Burlington.—July.—Annual.

Class XVI. MONADELPHIA. Stamens united by their filaments into one parcel.

Order I. TRIANDRIA. Three stamens.

276. SISYRINCHIUM. Spathe two leaved ; petals six, nearly equal ; capsule inferior, three celled.

Order V. DECANDRIA. Ten stamens.

277. GERANIUM. Calyx five leaved ; petals five, regular ; nectary five glands on the base of the longer filaments ; fruit beaked, separating into five one seeded capsules.

278. OXALIS. Calyx five leaved ; petals five, connected at base ; capsules superior, five celled, five angled, opening at the angles.

Order VIII. POLYANDRIA. Many stamens.

279. MALVA. Calyx double, the outermost two or three leaved ; capsules numerous, one seeded, disposed in a flat ring.

280. ALTHÆA. Calyx double, the outermost from six to nine cleft ; capsules numerous, one seeded, in a flat ring.

281. HIBISCUS. Calyx double, the outermost many leaved ; capsule five celled, many seeded.

MONADELPHIA.

TRIANDRIA.

276. SISYRINCHIUM.

SISYRINCHIUM ANCEPS.

Blue eyed Grass.

Stem two edged, spathe longer than the flowers, petals mucronated, germs glabrous.

Syn. SISYRINCHIUM GRAMINEUM. Curt.

The small, delicate, blue flowers of this plant are not unfrequent among the grass in moist ground. Stem two edged, the edges extending into a wide margin; smooth, with one or two branches, often a foot high. Leaves linear, grass like, sheathing at base. Spathes swelling, pointed, the outermost inclosing several others, each producing a flower. Peduncles filiform. Flowers shorter than the spathe, purple. Germs smooth or a little villous. Petals six, spreading, terminated by a point.—June, July.—Perennial.

DECANDRIA.

277. GERANIUM.

GERANIUM MACULATUM. *L. Spotted Geranium or Cranesbill.*

Peduncles two flowered; stem forked, erect; leaves five parted and cut, the upper ones sessile. *L.*

Bigelow, Medical Botany, Pl. viii.

No family of plants is more extensively cultivated for ornament than the Linnæan genus *Geranium*, since divided by L'Heritier into three genera, *Erodium*, *Pelargonium*, and *Geranium*. It must be confessed that a great number of exotic species are carefully propagated in green houses and parlours, which are altogether inferior to the present very beautiful native. It is very common about fences and the edges of woods, preferring a soil that is somewhat moist. Stems erect, hairy, dividing by forks, or more numerous branches, one or two feet high. Leaves large, spreading, hairy, divided in a palmate manner into five or seven lobes, which are variously cut and toothed at their extremities, the lower ones petioled, the upper ones nearly sessile.

As the leaves grow old, they are usually marked with pale spots about the sinuses. Peduncles long, hairy, supporting about two flowers. Calyx five leaved, those edges, which are outermost in the bud, hairy. Petals rounded, purple. Fruit ending in a long beak, containing five awns, which spring out and scatter the seeds when ripe. The root is perennial, very astringent, and useful for its medicinal properties.—May, June.—Perennial.

GERANIUM ROBERTIANUM. *L.* *Herb Robert.*

Peduncles two flowered; leaves somewhat pedate, pinnatifid, five, angled; calyx ten angled, capsules rugged. *Sm.*

A branching plant, much smaller in its flowers and leaves than the preceding. Stem spreading, fragile, commonly of a reddish cast. Leaves somewhat hairy, petioled, ternate or quinate, the divisions mostly pinnatifid. Peduncles long, somewhat hairy, with two terminal flowers. Calyx hairy. Petals rounded, pale purple. The whole plant has a peculiar, strong smell.—Road sides, Malden.—Flowering most of the summer and autumn.—Annual.

GERANIUM DISSECTUM. *Willd.* *Wood Geranium.*

Diffuse, pubescent, leaves opposite, five parted, the lobes three cleft and cut; peduncles two flowered, elongated; petals emarginate, as long as the awned calyx; beak hairy.

A delicate plant with small flowers. Stem a foot high, pubescent. Leaves cut almost to the base into about five segments, these again subdivided and variously cleft. Petioles hairy. Peduncles axillary, forked, with four minute linear bractes at the bifurcation. Calyx hairy, awned. Petals short, pale red. Beak hairy, a part of the hairs glandular.—On Medford hills, near the Andover turnpike.—June, July.—Annual.

278. OXALIS:

OXALIS ACETOCELLA. *L.* *Common Wood Sorrel.*

Stemless; scape one flowered, longer than the leaves; leaves ternate, broad-obcordate with rounded

lobes ; styles as long as the inner stamens ; root dentate. *Willd.*

Root dentate, with truncated projections. Petioles semicylindrical. Peduncles roundish, pubescent, with two opposite, acute bractes. Segments of the calyx oblong, acute. Petals oblong, obliquely emarginate, white, striate, with purple, yellow at base. Stamens alternately long and short. Styles equal to the longer stamens.—Woods.—May, June.—Perennial.

Not found about Boston, but very abundant in woods from fifty to one hundred miles to the north and west. The American plant has the petals oblong and unequally bilobate, a character which might be considered specific, did not the European plant, as I find from specimens, sometimes present the same figure.

OXALIS VIOLACEA. L.

Violet Wood Sorrel.

Stemless ; scape umbelliferous, pedicels somewhat pubescent ; flowers nodding ; leaves ternate, smooth ; tips of the calyx fleshy ; styles shorter than the outer stamens.

A handsome species with red or purplish flowers. Leaves inversely heart-shaped as in the other species.—Brooklyn, Connecticut.—May.—Perennial.

OXALIS STRICTA. L.

Upright Wood Sorrel.

Peduncles umbelliferous ; stem branching, erect ; leaves ternate, obcordate ; styles as long as the inner stamens. *L.*

This plant is pretty common about the borders of fields and cultivated grounds. Stem erect, varying greatly in height, according to the soil in which the plant grows. Leaves ternate, inversely heart shaped, very thin and delicate ; their common petiole long and slender, without stipules. Peduncles axillary, generally longer than the petioles, (in which respect the plant differs from that of Willdenow,) supporting small, terminal umbels of yellow flowers. Fruit beaked, erect.—Flowers all summer.

POLYANDRIA.

279. MALVA.

MALVA ROTUNDIFOLIA. *L.* *Round leaved Mallow.*

Stem prostrate; leaves roundish, heart shaped, obtusely five lobed. Fruit stalks bent downward. *L.*

Root fusiform. Stems lying upon the ground, branching. Leaves roundish, somewhat reniform, crenate, with five or seven imperfect lobes. Petioles long, hairy. Stipules lanceolate, ciliate. Flower stalks axillary, shorter than the petioles, several together, hairy. Outer leaves of the calyx linear, inner ones ovate. Petals purplish white, deeply emarginate. Fruit flat, with numerous capsules forming its circumference, the stalks commonly deflexed.—In cultivated ground, about houses and side walks.—All summer.

280. ALTHÆA.

ALTHÆA OFFICINALIS. *L.* *Marsh Mallow.*

Leaves downy, oblong, ovate, obtusely three lobed, toothed. *Willd.*

This plant grows spontaneously on the marshes at South Boston, and is said to be found at other places on the sea coast. It is probably not originally native, but imported from Europe. Root perennial, long, white. Stem erect, firm, covered with thick, woolly down. Leaves alternate, ovate, with three or more imperfect lobes, toothed, exceedingly downy and velvet-like to the touch. Flowers large, axillary and terminal. Calyx downy. Petals light, purple, inversely heart shaped. The whole plant, especially the root, abounds in mucilage, and is much used as a demulcent remedy.—August, September.—Perennial.

281. HIBISCUS.

HIBISCUS PALUSTRIS. *L.* *Marsh Hibiscus.*

Stem herbaceous, simple; leaves ovate, somewhat three lobed, downy underneath; flowers axillary. *Willd.*

A tall, handsome plant. Stem erect, four or five feet high, somewhat downy. Leaves ovate or three lobed, green above, whitish and soft with down underneath, obtusely serrate, acuminate. Flowers nearly as large as the hollyhock, showy, pale purple. The peduncles are long, axillary and sometimes connected with the petioles, geniculated toward the top. Outer segments of the calyx about twelve, downy, linear; inner segments five, half ovate. Petals very large.—Found in Newton, near the banks of Charles river.—August.—Perennial.

The bark is fibrous and very strong, and is capable of affording a tolerable substitute for hemp.



Class XVII. **DIADELPHIA.** *Stamens united in two distinct sets.*

Order II. **HEXANDRIA.** *Six stamens.*

282. **FUMARIA.** Calyx two leaved; corolla irregular, spurred at base; filaments two, each with three anthers; capsule, one celled without valves, one seeded.

283. **CORYDALIS.** Calyx two leaved; corolla ringent; filaments two, membranous, each with three anthers; capsule siliquose, many seeded.

Order III. **OCTANDRIA.** *Eight stamens.*

284. **POLYGALA.** Calyx five leaved, two of the leaves wing shaped and coloured; corolla with a cylindrical banner; legume inversely heart shaped, two celled.

Order IV. DECANDRIA. Ten stamens.

285. GENISTA. Calyx with the upper lip two toothed, the lower three toothed; banner oblong, reflected back by the pistil and stamens; stigma involute; stamens all united.

286. LUPINUS. Stamens all united; anthers alternately rounded and oblong; legume coriaceous, swelling at the seeds.

287. CROTALARIA. Banner cordate, large; keel acuminate; filaments connate, with a dorsal fissure; legume pedicelled, turgid.

288. PHASEOLUS. Keel with the stamens and style spirally twisted.

289. LATHYRUS. Style flat, villous above, broader upward; two upper segments of the calyx shorter.

290. VICIA. Calyx with two teeth above and three longer straight teeth below; banner emarginate; stigma transversely bearded on the under side.

291. TRIFOLIUM. Legume hardly longer than the calyx, falling off entire; flowers more or less in heads.

292. LESPEDEZA. Calyx five parted; keel of the corolla obtuse; legume lenticulae, unarmed, one seeded.

293. HEDYSARUM. Calyx five cleft; keel of the corolla obtuse; loment jointed, the joints compressed and one seeded.

294. GLYCINE. Calyx two lipped; keel of the corolla turning back the banner at the tip; legume many seeded.

295. ROBINIA. Calyx four cleft, the upper segment two parted; banner roundish; legume compressed; elongated.

296. *TEPHROSIA*. Calyx teeth subulate, subequal ; stamens monadelphous ; legume compressed, coriaceous.

297. *MEDICAGO*. Legume spiral, compressed, pushing the keel from the banner.



DIADELPHIA.

HEXANDRIA.

282. *FUMARIA*.

FUMARIA OFFICINALIS. *L.* *Common Fumitory.*

Spikes loose ; capsules globose, emarginate ; stem spreading ; leaflets wedge-lanceolate.

A small glaucous plant not uncommon about gardens and cultivated grounds. Leaves twice pinnate, the leaflets dilated upward. Flowers rose coloured with crimson tips. Pod one seeded.—Flowers all summer.—Probably introduced.—Annual.

283. *CORYDALIS*.

CORYDALIS GLAUCA. *Pursh.* *Glaucous Corydalis.*

Stem erect, branching, leaves glaucous, those of the stem biternate ; bractes minute ; nectary single ; siliques linear, three times as long as their stalk.

Syn. *FUMARIA SEMPERVIVENS*. *L.*

This delicate plant is found upon rocky hills in Roxbury and Brookline, beginning to flower in the early part of May. The whole plant has a smooth, glaucous appearance. Root fusiform. Stem erect, hollow, minutely dotted with purple and green, and covered with fine glaucous bloom. Leaves from the root and stem, subdivided in a pinnate manner ; the leaflets smooth, and variously cut, often tipped with purple. Flowers in a panicle or compound raceme, beautifully shaded with flesh colour and

yellow. Calyx of two serrate, ovate, acuminate leaves. Corolla placed transversely, its base a single rounded spur, its mouth closed and consisting of four lips, the two lateral ones cohering at their tips. Stamens in two bundles of three each. Germ long, linear, curved upward. Siliques linear, slender.—Biennial.

CORYDALIS FUNGOSA. Pers.

Climbing Corydalis.

Stem climbing; leaves furnished with tendrils; racemes axillary; corymbs nodding, corollas monopetalous, bigibbous at base.

Syn. FUMARIA FUNGOSA. Willd.

FUMARIA RECTA. Mx.

Stem smooth, striated, climbing. Leaves decompound-pinnate, the segments twice ternate, the leaflets obtusely three lobed, smooth, paler beneath; the partial petioles reflexed, and serving the purpose of tendrils. Flowers in axillary racemes, pale flesh coloured. Peduncles clavate. Calyx of two minute deciduous leaves. Corolla flesh coloured, oblong ovate, compressed, slightly hearted at base, fungus or cellular with two internal cavities, tapering to a neck and ending in two cordate lips, and two smaller lateral spatulate lips cohering at top, with four bundles of three or four stamens each inside. Germ linear with a bifid, four toothed, flabelliform stigma. Silique many seeded. Brought to the Botanic garden from the State of Maine. It flowers all summer, forming handsome festoons and bowers.—Perennial.

CORYDALIS CUCULLARIA. Pers.

Dutchman's Breeches.

Scape naked; raceme simple, one sided; nectaries two, divaricate, as long as the corolla; style included; root tuberous.

Syn. FUMARIA CUCULLARIA. L.

A delicate, fine leaved plant. Root solid, being a collection of small solid bulbs or tubers, of different sizes inclosed in a common scaly sheath. Leaves radical, somewhat glaucous, ternate, the divisions bipinnate, the last subdivisions linear-

oblong. Flowers in a short, unilateral raceme, white with yellowish tips. Calyx small, of two linear and two ovate leaves. Nectaries two, obtuse, diverging sacs, longer than the peduncle; united to form the corolla above. Petals or lips of the corolla two, each giving rise to three stamens. Capsule narrow-ovate.—Woods:—Jeffrey, New Hampshire.—June.—Perennial.

CORYDALIS FORMOSA. *Ph.* *Red flowered Corydalis.*

Scape naked; raceme nodding, many flowered, nectaries two, short, incurved, style exerted; root tuberous.

An exceedingly beautiful plant, somewhat larger than the preceding. Leaves divided as in the foregoing species, very glaucous underneath. Scape and peduncles of a fine purplish red. Corolla rose coloured, somewhat resembling that of the last, but larger, and with the nectaries very obtuse, and much shorter than the peduncles. On the sides of Ascutney mountain, Vermont. In Hanover, New Hampshire.—July.—Perennial.

OCTANDRIA.

284. POLYGALA.

POLYGALA SANGUINEA. *L.* *Caducous Polygala.*

Stem branching at top; leaves alternate, linear; spikes headed; flowers beardless. *Mich. abr.*

The purple, or rose coloured heads of this plant are very observable in moist ground, during the months of August and September. Stem erect, angular, its branches exceeding the main stem in height. Leaves alternate, smooth, linear-lanceolate. Flowers in terminal, cylindrical heads. As these heads increase at their summit, the lower flowers fall off, leaving a ragged or squarrous peduncle, on which Linnæus founded his specific character.

POLYGALA RUBELLA. *Muhl.* *Bitter Polygala.*

Bigelow, Medical Botany, Pl. liv.

Stem simple, leaves linear-oblong, mucronate; flowers racemed, those of the stem winged, those of the root apterous.

Root somewhat fusiform, perennial, branching. Stems numerous, ascending, smooth, angular, simple. Leaves scattered, smooth; the lower ones obovate, smaller; the upper ones linear-lanceolate, obtuse, mucronated, sessile. Flowers purple, short, crested, in terminal racemes. Bractes small, ovate-lanceolate, caducous. Wings of the calyx rhomboid-oval, obtuse, with a slight middle nerve. Corolla small, closed, of three segments, the middle one largest and crested by the division of its sides and extremity. Anthers eight, forming a double row, the filaments coalescing. Germ compressed, inversely heart shaped; style deflexed; stigma bearded inside with a prominence below it. Capsule inversely heart shaped, nearly smooth and invested with the wings of the calyx. Seeds two, obovate, hairy, with a transparent appendage or strophiole on the inside. From the base of the stem proceed a number of prostrate shoots situated upon, and sometimes nearly under the ground, bearing a row of incomplete, fertile flowers. These flowers have a calyx without wings, a minute corolla and stamens and a short style. The germ and fruit precisely resemble those of the more perfect flowers.—Dry fields, Salem.—June, July.—Perennial.

The whole plant is strongly bitter and used in medicine.

POLYGALA SENEGA.

Seneca Snake Root.

Bigelow, Medical Botany, Pl. xxx.

Stems erect, smooth, simple. Leaves alternate, lanceolate, broadest at base. Flowers slightly crested.

The *Polygala senega* has a firm, hard, branching, perennial root, consisting of a moderately solid wood, and a thick bark. This root sends up a number of annual stems, which are simple, smooth, occasionally tinged with red. The leaves are scattered, nearly or quite sessile, lanceolate, with a subacute point, smooth, paler underneath. Flowers white, in a close terminal spike. The calyx, which in this genus is the most conspicuous part of the flower, consists of five leaflets, the two largest of which, or wings, are roundish-ovate, white and slightly veined. Corolla small, closed, having two obtuse, lateral segments, and a short crested extremity. Capsules obcordate, invested by the persistent calyx, compressed, two celled, two valved. Seeds two, oblong-obovate, acute at one end, slightly hairy, curved, black-

ish, with a longitudinal, bifid, white appendage on the concave side. The spike opens gradually, so that the lower flowers are in fruit while the upper ones are in blossom. On the banks of Lake Champlain.—July.—Perennial.

The root of this species is extensively used in medicine.

POLYGALA CRUCIATA. L.

Cross leaved Polygala.

Stem erect, branching, winged at the angles ; leaves in fours, linear-lanceolate ; heads spiked, sessile.

Stem short, with four membranous angles, and opposite branches. Leaves in whorls of four, sessile, smooth, lanceolate, very obtuse, slightly mucronated. Flowers in a terminal, oblong head. The two longer leaves of the calyx heart shaped, acute, purple. In low grounds, rare, flowering in the latter part of summer.—Annual.

POLYGALA VERTICILLATA. L.

Whorl leaved Polygala.

Stem erect, branched ; leaves verticillate, linear ; spikes pedunculated, linear ; flowers alternate, approximate.

A very slender species. Stem erect, quadrangular, branched, the branches usually exceeding the main stem in height. Leaves linear-lanceolate, in whorls of five or six. Spikes slender ; flowers small, whitish, the lower ones usually scattered.—On dry hills, Roxbury.—July.—Annual.

POLYGALA PAUCIFOLIA. Willd.

Fringed Polygala.

Stem simple, erect, naked below ; leaves ovate, acute, glabrous ; terminal flowers large, pencilled ; radical flowers apterous.

A beautiful low plant with purple flowers, larger than in most others of the genus. The leaves grow mostly at the top of the stem, and immediately above them are three or four very handsome, crested, purple flowers. Calyx leaves five, the uppermost gibbous at base and somewhat acute, the two next longer than the corolla, narrow at base, wider and obtuse at top, the two remaining ones small, acute and white. Corolla purple, the middle lobe white with a purple crest.

This plant likewise produces horizontal, radical shoots with small greenish flowers like those in *P. rubella*, which see.—Woods, Brookline, rare.—May.—Perennial.

DECANDRIA.

285. GENISTA.

GENISTA TINCTORIA. *L.* *Wood Waxen. Dyers' Weed.*

Leaves lanceolate, smooth; branches round, striate, erect, unarmed. *Sm.*

Root woody, tough, creeping extensively. Stems or branches numerous, erect or ascending, round, furrowed, smooth. Leaves alternate, sessile, lanceolate, acute. Flowers on the upper part of the branches, axillary, solitary, nearly sessile, bright yellow. This plant has overrun the hills on the south side of Salem, so as to give them, in the month of July, an uniformly yellow appearance at a distance. It was probably imported originally from Europe. The whole plant is said to dye a fine yellow colour.

286. LUPINUS.

LUPINUS PERENNIS. *L.* *Common Lupine.*

Calyxes alternate without appendages, upper lip emarginate, lower entire. *L.*

This common garden flower grows wild very plentifully in the woods at Watertown. Stems erect, somewhat hairy. Leaves digitate, consisting of about eight or ten lanceolate-wedge shaped leaves, arranged like rays around the end of the petiole. They are somewhat hairy and pale underneath. Flowers blue, in a terminal spike or raceme.—Perennial.

287. CROTALARIA.

CROTALARIA SAGITTALIS. *L.* *Rattle Pod.*

Hairy, erect, branching; leaves simple, lanceolate; stipules opposite, acuminate, decurrent; racemes opposite to leaves, about three flowered; corollas smaller than the calyx.

A small, hairy plant with turgid pods. Stem from four to eight inches high, branching. Leaves alternate, sessile, oblong or lanceolate. Stipules opposite and decurrent, so that the pair appear inversely sagittate. Calyx segments long, lanceolate, acuminate, hairy. Corolla small, yellow. Legume shortly stipitate, oblong, inflated, few seeded.—Dry grounds.—Cambridge.—July.—Annual.

288. PHASEOLUS.

PHASEOLUS TRILOBUS. *Max.* *Three lobed Bean Vine.*

Twining, pubescent, lower leaflets rhomboid-oval, upper ones three lobed; heads on long stalks; legumes linear.

Stem twining, angular. Stipules oblong. Leaves ternate, the leaflets broad, ovate, entire, the upper ones, especially the terminal one, three lobed. Peduncles longer and larger than the petioles, with a head of flowers. Banner spreading, white tinged with red; wings small, whitish; keel slightly twisted, tipped with purple. Legumes linear.—South Boston.—July.—Annual.

289. LATHYRUS.

LATHYRUS MARITIMUS. *Beach Pea.*

L. caule compresso, tetragono; stipulis sagittatis; foliolis numerosis, subalternis, obovatis; pedunculis folio brevioribus, subseptemfloris.

Stem compressed, four angled; stipules sagittate; leaflets numerous, subalternate, obovate; peduncles shorter than the leaves, about seven flowered.

Syn. PISUM MARITIMUM. Pursh?

This plant, which has very much the habit and aspect of a pea, is only found on the borders of the beach and salt marsh, whence it has been often taken for the *Pisum maritimum* of Europe. It is, however, decidedly a *Lathyrus*. The whole plant has a glaucous aspect. Stems rigid, compressed, four angled. Stipules arrow shaped, meeting each other round the

stem, a little toothed at base. Petioles with a double channel above, and ending in a branched tendril. Leaflets about ten, nearly oval, mucronated, reticulated with transparent veins. Flowers large and shewy. Racemes six to eight flowered with a long, angular peduncle. Calyx ventricose, the two upper segments broadest and shortest. Banner reflexed, obcordate, purple. Wings paler, with a large tooth above. Keel also pale and toothed above. Stamens united into a tube. Germ oblong-lanceolate, compressed. Style ascending, flat, never carinated, pubescent above for about half its upper side. Legumes oblong, subfalcated, turgid. Seeds globular, as large as pepper, turning dark when dry.—Beach, Dorchester, Chelsea.—May, July.—Perennial.

LATHYRUS PALUSTRIS. L.

Marsh Lathyrus.

Stem winged; stipules semisagittate, lanceolate; leaflets six, lanceolate; peduncles about three flowered.

Stem slender, broadly winged, supported by the tall meadow grass among which it grows. Leaves pinnate, the leaflets oblong-lanceolate, acute or slightly obtuse and mucronated, the common petiole ending in a branched tendril. Peduncles much longer than the leaves, with a few drooping, purple flowers. Wings of the corolla with a tooth at base. Wet meadows, South Boston, Brighton.—June.—Perennial.

290. VICIA.

VICIA CRACCA. L.

Tufted Vetch.

Peduncles many flowered; flowers imbricate, leaflets lanceolate, pubescent; stipules semisagittate, mostly entire.

Stem square, slender, somewhat downy. Leaves of many pairs, the leaflets often alternate, linear lanceolate, mucronate, downy or villous, the petiole terminating in a branched tendril. Peduncles about twenty flowered; the flowers purple; forming long, crowded, recurved, unilateral racemes.—In fences &c. Cambridge, Malden.—July.—Perennial.

VICIA SATIVA. L.

Common Vetch.

Flowers two, subsessile; stipules toothed, marked with a spot; leaflets oblong-ovate, retuse, mucronated; legumes erect, roundish, glabrous.

Stem slender, quadrangular. Petioles bearing five or six pairs of lanceolate, truncated, mucronate leaflets. Stipules semisagittate, toothed, with a remarkable scar on the outside. Flowers two or three, axillary, purple. Calyx prismatic with five long teeth. Banner straight, keel very short. Legume rough, compressed. About cultivated grounds, probably introduced.—June.—Annual.

VICIA PUSILLA. Willd.

Slender Vetch.

Peduncles solitary, capillary, one flowered. Stipules semisagittate, entire; leaflets about six, linear lanceolate, obtuse; legumes small, oblong, toothed.

A small and very slender species. Stem square, supported by the tendrils at the ends of the petioles. Leaflets small, linear, very obtuse. Flowers very small, whitish, solitary, on slender, axillary peduncles. Legumes oblong, with four or five roundish seeds.—About fences, South Boston.—July.—Annual.

291. TRIFOLIUM.

TRIFOLIUM ARVENSE. L.

Field Trefoil.

Heads very hairy, cylindrical; teeth of the calyx bristle shaped, longer than the corolla; leaflets narrow-obovate. *Sm.*

This annual species of trefoil is exceedingly common in roads and dry fields, flourishing in the most barren and gravelly soils. Stem erect, round, hairy, branching. Leaves on short footstalks, consisting of three narrow, inversely ovate, hairy leaflets. The flowers grow in long, cylindrical heads, or spikes; the calyx teeth ending in feathery hairs, which project beyond the corolla, give the heads a downy and grayish appearance. Pod very small, one seeded.—July.—August.

TRIFOLIUM REPENS. L. *White Clover, or Honeysuckle.*

Heads like umbels; legumes four seeded; stems creeping. L.

Common in pastures, flowering from May to September. Root perennial. Stems spreading, leafy, smooth. Leaves on long petioles; leaflets roundish, acute at their base, finely serrate, commonly marked with a white, semicircular spot. Flowers white, in a dense umbel, resembling a head; corollas persistent, enclosing the pod, which contains three or four seeds.—White clover increases rapidly, and resists drought. Cattle are very fond of it, and it forms one of the best materials for feed in pastures.

TRIFOLIUM PROCUMBENS. L. *Yellow Clover.*

Spikes oval, imbricate; banner furrowed, reflexed, persistent; stem procumbent, leaflets obovate.

Stem spreading. Leaflets smooth, obovate, denticulate. Heads of flowers solitary, axillary, pedunculated, roundish or oval. Calyx hairy; corolla yellow, turning dull with age.—Dry fields, Waltham.—July.—Annual.

TRIFOLIUM PRATENSE. L. *Red Clover. Honeysuckle.*

Spikes dense; stems ascending; corollas unequal; four of the calyx teeth equal; stipules awned. Sm.

Stem oblique, somewhat branching, hairy toward the top. Leaflets ovate, with usually a white spot on the upper side, somewhat hairy underneath. Stipules broad, membranous, ribbed, ending in a point or awn. Flowers red, in large ovate spikes resembling heads, somewhat sweet scented. Calyx of five segments, the lowest longest. Banner of the corolla longer than the wings and keel. The excellence of red clover for hay is well known. It is extensively cultivated here, alone, or in combination with herds grass, (*Phleum pratense*.) In its wild state it grows every where, and flowers from May to September.—Perennial.

§ *Subgenus MELILOTUS.* *Legumes longer than the calyx; flowers racemed.*

TRIFOLIUM OFFICINALE. *L.**Melilot.*

Legumes in racemes, naked, two seeded, wrinkled, acute, stem erect. *L.*

Syn. MELILOTUS OFFICINALIS. *Pursh.*

Stem upright, furrowed, two feet high. Leaflets oblong or lance-obovate, serrate, smooth. Spikes axillary and terminal, on footstalks, many flowered. Flowers nodding, mostly to one side, yellow. Calyx and pedicels hairy. Pods pendulous, oval, tapering at both ends, hairy. This trefoil in drying exhales an agreeable scent, similar to the sweet scented vernal grass. Horses are said to be very fond of it.—June, July.—It grows in great plenty on the borders of the marsh at South Boston, where it was probably introduced from Europe. Flowers sometimes white.

292. LESPEDEZA.

LESPEDEZA CAPITATA. *Mx.**Shrubby Lespedeza.*

Leaves ternate, lance-oblong, obtuse, silky beneath; stipules subulate; racemes axillary, ovate, shorter than the leaves; legumes hairy, shorter than the calyx. *Willd.*

Syn. HEDYSARUM FRUTESCENS. *Willd.*

A slender, whitish, woody plant, found in dry woods at Brighton and elsewhere. Stems erect, covered with soft hair, very leafy. Leaves on very short petioles; leaflets oblong, blunt, mucronated, their upper surface smooth, under surface covered with siken down, especially the edges and midrib. Racemes ovate, hardly so long as the leaves, but projecting beyond them on axillary footstalks. Calyx leaves long, lanceolate, pointed, hairy enclosing the pods.—September.

LESPEDEZA POLYSTACHYA. *Mx.**Hairy Lespedeza.*

Leaves ternate, round-elliptic; stipules subulate; racemes axillary, oblong, longer than the leaves; legumes hairy. *Willd.*

Syn. HEDYSARUM HIRTUM. *Willd.*

More frequent in woods than the last; resembling it in colour and habit. Stems simple, shrub like, whitish, hairy, two or

three feet high. Leaves on very short, scattered stalks; leaflets oval, obtuse, whitish and hairy underneath. Racemes ovate, exceeding the leaves, on hairy stalks which considerably exceed their own length. Calyx shorter than in the last species, about equal to the corolla, or to the pods, which are ovate, hairy, and pointed.—September.

LESPEDEZA SESSILIFLORA. *Mx.* *Reticulated Lespedeza.*

Leaves ternate, linear, hairy underneath; racemes axillary; legumes ovate, reticulated, longer than the calyx. *Willd.*

Syn. HEDYSARUM RETICULATUM. Willd.

Stem erect, slightly pubescent. Petioles slender, somewhat hairy. Leaflets small, oblong, obtuse at both ends, mucronated, pubescent underneath. Flowers small, violet coloured, in axillary bunches. Pods ovate or obovate, acute, reticulated with prominent lines.—Woods.—August.

LESPEDEZA VIOLACEA. *Pers.* *Violet Lespedeza.*

Leaves ternate, elliptical, obtuse; racemes umbelled, as long as the petiole; flowers in pairs; legumes rhomboidal, reticulated, glabrous. *Willd.*

Syn. HEDYSARUM VIOLACEUM. Willd.

Stem erect. Leaflets small, oval, mucronated, nearly smooth. Flowers numerous, violet coloured, growing mostly in pairs, forming racemes which are somewhat umbelled. Pods one seeded, flat, smooth, rhomboidal.—Woods.—Brighton.—August.

LESPEDEZA DIVERGENS. *Pers.* *Spreading Lespedeza.*

Leaves ternate, oblong, obtuse; racemes longer than the petiole; flowers in pairs; legumes ovate, reticulated, glabrous. *Willd.*

Syn. HEDYSARUM DIVERGENS. Muhl.

Stem erect, nearly smooth. Leaflets narrow, oblong, obtuse at both ends. Flowers violet coloured, in axillary racemes, the uppermost of which are somewhat longer than the petioles of the leaves, the lower ones short, and few flowered. The plant

has many axillary branches with small leaves and flowers. Pods oval, acute, flat, one seeded.—Woods.—August.

LESPEDEZA PROSTRATA. *Muhl.* *Trailing Lespedeza.*

Prostrate; leaves ternate, leaflets roundish-elliptical; racemes axillary; legumes ovate, acute.

Syn. LESPEDEZA PROCUMBENS. Pursh.

Stem prostrate, covered with whitish hair. Petioles, veins and edges of the leaves hairy. Leaflets varying from oblong to orbicular. Racemes axillary, capitate, the lower ones nearly sessile, the upper ones on long capillary stalks.—Woods.—Roxbury.—August.

Characters drawn from the length of the peduncles are obviously fallacious.

293. HEDYSARUM.

HEDYSARUM ROTUNDIFOLIUM. *Mich.* *Round leaved Hedysarum.*

Stem prostrate, hairy; petioles hairy; stipules round-heart shaped, reflexed; leaves ternate, orbicular, hairy on both sides; racemes few flowered; joints of the loment subrhomboidal. *Mich.*

Stem trailing, moderately hairy. Leaves on hairy stalks, leaflets round, pale underneath, ciliate at the lower edge, with a few fine hairs on both surfaces, from one to two inches in diameter. Stipules of the leaflets small, lanceolate; of the leaves ovate, acuminate, bent backward; both hairy. Racemes axillary and terminal, few flowered. Peduncles longer than the petioles, nearly smooth. Flowers purple. Corolla twice as long as the calyx. Loments with five or six subrhomboidal joints, hispid and cohesive.—Woods.—Waltham.—August.

HEDYSARUM HUMIFUSUM. *Muhl.* *Running Hedysarum.*

Stem prostrate, subglabrous; leaves ternate, leaflets ovate, slightly hairy, racemes elongated; joints of the loment subrhomboidal.

A cospecies with the last, but altogether a smoother plant, with its leaflets oval or ovate and subacute. Racemes paniced,

elongated, many flowered. Loments much as in the last.—Woods, Waltham.—August.

HEDYSARUM NUDIFLORUM. *L.* *Naked flowering Hedysarum.*

Leaves ternate, roundish-ovate, acuminate; scape paniced, smooth, radical; joints of the loment roundish-triangular, somewhat smooth. *Willd.*

This is a remarkable species. The flower stalk stands by itself, and seems to constitute a distinct, leafless plant. On pulling it out of the ground, the root is found to be connected with a leafy stem, which is frequently at some distance from the scape. Leaves at the top of the stem on long stalks, nearly smooth, whitish underneath, ovate, with a short point. Scape smooth, slender, longer than the stem. Flowers purple, in a panicle or raceme, on capillary stalks.—Woods.—August.

HEDYSARUM ACUMINATUM. *Mich.* *Pointed Hedysarum.*

Erect, simple, leafy at top; leaves ternate, oval, long-acuminate, the odd one round-rhomboidal; panicle terminal, on a very long peduncle. *Mich.*

A larger plant than the last, which it resembles in habit. Leaves on long stalks from the top of the stem, green above, paler underneath; the side leaflets ovate, the terminal one larger, broad, roundish, three inches in diameter; all ending in a long point. Panicle very long, proceeding from the top of the stem above the leaves. Peduncles nearly glabrous, with slender, remote branches. Flowers purple. Loments of two or three slightly connected joints. These are large, triangular, rounded in front, and hollowed out at top, their two posterior angles very acute, the anterior obtuse.—On the Concord turnpike, near Fresh pond.—July, August.

HEDYSARUM CANADENSE. *L.* *Canadian Hedysarum.*

Leaves ternate, oblong-lanceolate; stipules filiform; flowers racemed; joints of the loment obtusely triangular, hispid. *Willd.*

A tall, handsome species, flowering in July. Stem erect, striate, hairy. Leaves ternate. Leaflets long and narrow, broad-

est at base, gradually tapering to the point, which is not very acute. Racemes from the top of the stem and axils of the upper leaves. Pods hairy, consisting of four or five joints, which are imperfectly triangular, their sides curved, and their angles obtuse.—Woods.—Perennial.

HEDYSARUM PANICULATUM. L. *Panicled Hedysarum.*

Erect, glabrous ; leaves ternate, oblong lanceolate ; stipules subulate ; panicle terminal ; joints of the loment rhomboidal.

Stem erect, striate, smooth. Leaves smooth ; leaflets linear-oblong, tapering to a point, about three inches long. Joints of the loment about five, imperfectly rhomboidal.—Dry woods.—Sudbury.—July.

HEDYSARUM CUSPIDATUM? Willd. *Large Hedysarum.*

Erect, smooth ; leaves ternate ; leaflets ovate, acuminate ; joints of the loment rhomboid-triangular.

Stem four or five feet high, roundish, smooth. Leaves ternate ; leaflets large, smooth, ovate, acuminate. Stipules of the leaves ovate, with a very long point ; those of the leaflets subulate. Flowers large, purple, in racemes terminating the stem and branches. Loments larger than in any of the other species, long, pendulous, composed of about half a dozen diamond-shaped joints. Both the loments and peduncles are rendered adhesive by a covering of minute hooks.—Woods, Oak island, Chelsea.—July.—Perennial.

294. GLYCINE.

§ *Subgenus APIOS.* *Germes with a cylindrical sheath at base.*

GLYCINE MONOICA. L. *Pea Vine.*

Leaves ternate, naked ; stems hairy ; fertile flowers without petals. *L.*

Syn. AMPHICARPA MONOICA. Nutt.

A very delicate wood vine, twining upon the bushes, and flowering in July and August. Stem slender, covered with minute hairs pointing backward. Leaves in threes, ovate, acute, smooth,

and very thin. Flowers in small, axillary, pendulous racemes, with the calyx and corolla nearly white. Legumes short, flat-tish, pointed.—Annual.

GLYCINE APIOS. *L.* *Tubercous Glycine. Ground Nutt.*

Leaves pinnate, with seven ovate-lanceolate leaflets; racemes shorter than the leaves; stem herbaceous, twining. *Willd.*

Syn. APIOS TUBEROSA. Pursh.

Not unfrequent in moist woods and thickets. Root tuberous, consisting of fleshy oval knobs, tapering at the ends, arranged at certain distances, like beads, on a principal running root. Stems round, twining. Leaves pinnate, consisting of five or seven ovate, acuminate, smooth leaflets. Flowers in axillary racemes, blackish purple, crowded, and not inelegant in their appearance.—July, August.—Perennial.

295. ROBINIA.

ROBINIA PSEUDACACIA. *L.*

Locust Tree.

Leaves pinnate with one odd leaflet; stipules prickly; racemes pendulous; calyx-teeth unarmed; legumes smooth.

Leaves pinnate, smooth, leaflets numerous on short petioles, oblong-oval, minutely mucronated, smooth both sides. Stipules of the leaflets minute, linear, passing in front of the petioles. Flowers in long, pendulous racemes. Calyx ventricose, green and purple, four toothed or cleft, the upper segment notched. Corolla white. Sides of the banner reflexed. Keel of two distinct, cohering petals. Legume broad and flat, with a few kidney shaped seeds. I have observed that in this species, together with *R. viscosa* and *R. hispida*, the keel of the flower consists of two distinct petals, inserted by separate claws, slightly cohering at tip and sometimes on a part of their under side; as takes place in *Ulex*, *Spartium*, &c.

The Locust tree, exceedingly valued for the hardness and durability of its timber, is not, I believe, found native in the New-England states, though abundantly naturalized near habitations and roads.—June.

296. TEPHROSIA.

TEPHROSIA VIRGINICA.

Tephrosia.

Erect, villous ; leaflets numerous, oblong, acuminate ; raceme terminal, short ; calyx woolly ; legumes retro-falcate, villous.

Syn. GALEGA VIRGINICA. L.

The root of this plant is very long, slender and tough, whence it has acquired the name of catgut. The whole plant is covered with a pale green down. Stem a foot high, round. Leaves alternate, pinnate, with from eight to twelve pair of oblong, mucronate leaflets and an odd one. Flowers very beautiful in a short terminal raceme. Calyx hairy, red, with very acute segments. Banner of the corolla whitish yellow, downy ; wings red, keel whitish and red. Stamens in two sets. Stigma bearded inside. Pods linear, crooked backward. A very handsome plant, growing in bunches in the driest sandy woods.—June, July.—Perennial.

297. MEDICAGO.

MEDICAGO LUPULINA. *L.**Nonesuch.*

Spikes ovate ; pods kidney shaped, veiny, rugged, single seeded, stems procumbent. *Sm.*

Occurs frequently by road sides, in pastures, &c. Stems spreading, angular, leafy. Leaves resembling clover, but smaller. Leaflets obovate, finely toothed. Spikes or heads ovate, of yellow flowers. The pods are black and rugged, with an evident spiral or cockle like structure, which characterizes the genus. When cultivated it is said to form a valuable grass, especially for sheep. In its wild state, however, its size is rather insignificant.—Flowers all summer.—Biennial.

Class XVIII. POLYADELPHIA. *Stamens united in more than two sets.*

Order IV. POLYANDRIA. *Many stamens.*

298. HYPERICUM. Calyx five parted, inferior; petals five; styles one, three, or five; capsules many seeded.

POLYADELPHIA.

POLYANDRIA.

298. HYPERICUM.

HYPERICUM ASCYROIDES. *Willd.* *Giant Hypericum.*

Flowers with five styles, terminal; stem erect, four sided, branching; leaves sessile, oblong, acute, glabrous; styles as long as the stamens.

Syn. HYPERICUM MACROCARPUM. Mx.

A large flowering species. Stem two or three feet high. Leaves oblong ovate, dotted with minute, pellucid points, only visible with a strong magnifier. Segments of the calyx ovate; petals yellow, nearly an inch long. Stamens very numerous. Capsules nearly as large as nutmegs, ovate, five valved. Seeds oblong, very numerous.—At Burlington, Vermont.—July.—Perennial.

HYPERICUM PERFORATUM. *L.* *Common St. John's Wort.*

Flowers with three styles; stem two edged; leaves obtuse, with pellucid dots; calyx leaves lanceolate. *Sm.*

A hardy and very common weed in pastures and dry soils. Stems numerous, erect, round, with a slight, prominent line on each side, brachiate. Leaves opposite, oblong-oval, entire, paler beneath, covered with small, transparent dots, which when held

against the light appear like perforations. Flowers numerous, terminal, bright yellow. Petals oval; stamens numerous; styles three.—July, August.—Perennial.

HYPERICUM CORYMBOSUM. *Willd.* *Spotted St. John's Wort.*

Flowers with three styles, dotted; stem erect, branching; leaves clasping, oblong-oval, obtuse, dotted with black; corymbs terminal, brachiate, crowded; calyx segments lanceolate.

Syn. **HYPERICUM MACULATUM.** *Mx.*

Somewhat smaller than the preceding, but with larger leaves. Flowers smaller, pale yellow.—Damp woods, Clelsea beach island.—July.—Perennial.

HYPERICUM CANADENSE. *L.* *Canada St. John's Wort.*

Flowers with three styles, axillary, pedunculated, solitary; leaves sessile, linear, narrowed at base; stem herbaceous, square, dichotomous above. *Willd.*

A small species, generally frequenting a soil which is somewhat moist. Stem round, with four prominent lines, formed by the decurrent base of the leaves. Lower branches opposite, upper ones in forks. Leaves linear-lanceolate, with transparent dots. Flowers axillary and terminal, small, yellow, on short pedicels. Capsules of a brownish colour, twice as long as the calyx.—July, August.—Annual.

HYPERICUM PARVIFLORUM. *L.* *Small flowered St. John's Wort.*

Flowers with three styles; stem four sided, erect, branching, glabrous; leaves ovate-oblong, obtuse, subcordate, sessile; panicles dichotomously corymbose; petals shorter than the calyx.

Grows in the same situations with the last, and is somewhat shorter with larger leaves. Flowers small, yellow.—Cambridgeport.—July, August.—Annual?

§ *Subgenus* **ELODEA.** *Petals with nectariferous claws. Glands between the divided stamens.*

HYPERICUM VIRGINICUM. L. *Virginian St. John's Wort.*

Flowers with three styles, enneandrous, terminal; leaves elliptical, obtuse, somewhat heart shaped, clasping; stem herbaceous, compressed. *Willd.*

This plant has much larger leaves than the preceding species. They are opposite, oblong, smooth, entire, heart-shaped at base, closely sessile or clasping, very obtuse, paler on the under side. Flowers in terminal bunches, their colour partaking of a mixture of yellow and purple. Stamens nine united in three parcels.—In low ground.—August.—Perennial.



Class XIX. SYNGENESIA. *Anthers united into a cylinder; flowers compound.*

Order I. *ÆQUALIS.* *All the florets with stamens and pistils, and all fertile.*

A. *Semifloscular, all the florets ligulate.*

299. CICHORIUM. Receptacle chaffy; calyx invested with scales; seeds surrounded with numerous short teeth.

300. APARGIA. Receptacle naked; calyx imbricate; down feathery, sessile.

301. LEONTODON. Receptacle naked; calyx imbricate, with flaccid scales; down simple, pedicelled.

302. PRENANTHES. Receptacle naked; down simple; calyx invested with scales; florets few, in one row.

303. LACTUCA. Receptacle naked; down simple, pedicelled; calyx imbricate, cylindrical, scarious at the margin.

304. *HIERACIUM*. Receptacle naked, dotted ; down simple, sessile ; calyx imbricate, ovate.

305. *KRIGIA*. Receptacle naked ; down of five membranous leaves, alternating with five bristles ; calyx simple, many leaved.

306. *SONCHUS*. Receptacle naked ; down simple, sessile ; calyx imbricate, swelling at the base.

B. *Flowers in heads.*

307. *ARCTIUM*. Receptacle chaffy ; down bristly and chaffy ; corolla floscular ; calyx globular with hooks on the top of the scales.

308. *CNICUS*. Receptacle villous ; down feathery ; corolla floscular ; calyx swelling, with spinous scales.

309. *ONOPORDON*. Receptacle cellular ; down capillary ; corolla floscular ; calyx swelling with spinous scales.

310. *LIATRIS*. Receptacle naked ; down feathery, coloured ; calyx oblong, imbricated.

311. *VERNONIA*. Receptacle naked ; down double, the outer chaffy, inner capillary ; corolla floscular ; calyx ovate, imbricate.

C. *Florets tubular.*

312. *BIDENS*. Receptacle chaffy, flat ; seeds angular ; down consisting of awns prickly backward ; calyx nearly equal, invested with leaves.

313. *MIKANIA*. Receptacle naked ; down simple ; calyx four or six leaved, and four or six flowered.

314. *EUPATORIUM*. Receptacle naked ; down simple or rough ; calyx imbricate, oblong ; style longer than the corolla, cloven half way down.

Order II. *SUPERFLUA.* Florets of the disc with stamens and pistils, those of the ray with pistils only ; all fertile.

315. *ARTEMISIA.* Receptacle mostly naked ; down none ; ray none ; calyx imbricated with roundish connivent scales.

316. *CONYZA.* Receptacle naked ; down simple or rough ; calyx imbricate, roundish ; florets of the margin three cleft.

317. *GNAPHALIUM.* Receptacle naked ; down feathery or rough ; calyx with scarious, coloured scales ; florets of the margin subulate.

D. *Flowers radiate.*

318. *CHRYSANTHEMUM.* Receptacle naked ; down none ; calyx hemispherical, imbricate, with the scales dilated, and membranous at the margin.

319. *INULA.* Receptacle naked ; down simple ; calyx imbricate ; rays numerous ; anthers with two bristles at base.

320. *ERIGERON.* Receptacle naked ; down simple ; florets of the margin very numerous and narrow, linear.

321. *SOLIDAGO.* Receptacle naked, pitted ; down simple ; florets of the margin from five to ten, remote ; calyx imbricate. closed.

322. *SENECIO.* Receptacle naked ; down simple ; calyx invested with scales, many leaved, equal ; the scales dead at their tips.

323. *ASTER.* Receptacle naked ; down simple ; calyx imbricate, with the lower scales spreading ; florets of the margin commonly more than ten.

324. **ANTHEMIS.** Receptacle chaffy ; seeds crowned with a slight border ; calyx hemispherical ; florets of the ray more than five, oblong.

325. **ACHILLEA.** Receptacle chaffy ; down none ; calyx ovate, imbricate, unequal ; florets of the ray from five to ten, inversely heart shaped or roundish.

Order III. FRUSTRANEA. Florets of the centre with stamens and pistils, fertile ; those of the ray with pistils only, barren.

326. **HELIANTHUS.** Receptacle chaffy ; seeds crowned with two lanceolate, chaffy scales ; calyx imbricate, somewhat squarrous.

327. **COREOPSIS.** Receptacle chaffy ; seeds compressed, emarginate, with two unarmed arms ; calyx double, each many leaved.

328. **RUDBECKIA.** Receptacle conical, paleaceous ; down with a four toothed margin ; calyx with a double row of scales.

329. **CENTAUREA.** Receptacle bristle ; down hairy ; rays funnel-shaped, irregular ; calyx various.

Order IV. NESESSARIA. Florets of the centre with stamens and pistils, barren ; those of the ray with pistils only, fertile.

330. **IVA.** Receptacle hairy ; seeds naked, obtuse ; down none ; calyx three leaved ; florets of the ray five.

SYNGENESIA.

ÆQUALIS.

299. CICHORIUM.

CICHORIUM INTYBUS. *L.**Succory.*

Flowers in pairs, sessile ; leaves runcinate.

The large, blue flowers of this elegant plant are extremely common in pastures and road sides every where in the vicinity of Boston. Stem two or three feet high, strong, angular, bristly. Leaves roughish, the radical ones runcinate, those of the stem heart shaped, acuminate, and sessile. Flowers mostly in pairs, sessile upon the sides of the stem. Calyx leaves erect, rough on the back, reflexed as they grow old. Florets of the corolla ligulate, ending in about five minute teeth.—From July to September.—Perennial.

300. APARGIA.

APARGIA AUTUMNALIS. *Willd.**Autumnal Hawkweed*

Scape branching, peduncles scaly ; leaves lanceolate, tooth-pinnatifid, smoothish. *L.*

Syn. *LEONTODON AUTUMNALE. L.*

HEDYPNOIS AUTUMNALIS. Sm.

This plant, probably an emigrant from Europe, has overrun the vicinity of this place, and grows in almost every kind of soil. It begins flowering in June and July, and is nearly the last plant that yields to the frosts of November, Root abrupt. Leaves all radical, spreading, lanceolate, more or less toothed and pinnatifid, according to the soil in which they grow, usually curving to one side. Scape spreading, bending upwards, furrowed, branching into a few peduncles, which are furnished with scattered, remote scales, and are hollow, like many others of the class, with a minute tuft, like cotton or cobweb, at the base of their cavity within. Flowers yellow, resembling those of the dandelion. The scales on the stalks and calyx are less numerous than in the European variety.

301. LEONTODON.

LEONTODON TARAXACUM. *L.**Dandelion.*

Outer scales of the calyx reflexed ; leaves runcinate, toothed, smooth.

The leaves of this very common plant are usually cited as examples of the runcinate form. The supposed resemblance to a lion's teeth will appear sufficiently obvious, to those who are fond of tracing etymologies, in any of its names *leontodon*, *dens leonis*, *dent de lion*, *dandelion*. The stalks or scapes are simple, hollow, smooth, and round. Flowers single, of a bright yellow. Calyx leaves entire, the outermost bent backwards. Florets ligulate, numerous. Down of the seeds on a pedicel.—Perennial.

302. PRENANTHES.

PRENANTHES ALBA. *L.**White flowering Prenanthes.*

Calyxes many flowered ; leaves angular-hastate, toothed ; flowers nodding ; racemes paniced. *Willd.*

A tall, smooth, lactescent plant, flowering in August and September. The large, radical leaves are conspicuous much earlier in the season. They are more or less triangular or halberd shaped, and lobed or toothed. The leaves of the stem are more regularly ovate and toothed, the upper ones lanceolate. The stem is commonly of a dark reddish colour, three or four feet high. Flowers paniced, drooping ; calyx white, containing ten or a dozen florets, surrounded with a dull reddish down.—Woods, low land, &c.—Perennial.—The root is intensely bitter.

Variety β . *nana*. From four to fifteen inches high. Leaves successively three parted, hastate, ovate and lanceolate ; in the smallest plants all simple. Racemes paniced or simple. Calyx ten or twelve flowered.—On the upper region of the White mountains.—August. Mr. Little.

No genus is more prone to vary than this. It is highly probable that many of the species described by Pursh are only varieties.

203. LACTUCA.

LACTUCA ELONGATA. *Muhl.**Tall Lettuce.*

Leaves smooth, the lower ones runcinate, clasping; the upper ones lanceolate, sessile; flowers paniced.

This plant, I am informed, sometimes appears in great abundance on grounds which are newly burnt over, and on this account it has received the name of *Fire weed* in some parts of the interior. The whole plant is lactescent. Stem erect, four or five feet high. Lower leaves long, spreading, runcinate, clasping the stem. Upper leaves sessile. The stem terminates in a large, spreading panicle of yellow flowers, which remain expanded but a short time.—July, August.

Variety β. linearis. When the top of the plant is destroyed by accident, young branches shoot up with entire linear leaves, appearing like a different species.

* LACTUCA INTEGRIFOLIA.

Arrow leaved Lettuce.

L. foliis sagittatis, integris, inermibus, amplexicaulibus; floribus paniculatis.

Leaves sagittate, entire, unarmed, clasping; flowers paniced.

Stem three or four feet high, round, smooth, striated, Leaves sessile, lanceolate, sagittate at base, entire, the lower ones a little eroded, pale underneath, the middle rib smooth. Panicle more compact than in *L. elongata*. Calyx cylindric-urceolate, the scales tipped with brown. Corolla yellow.

The uniformly entire leaves of this plant sufficiently distinguish it from *L. elongata*, from which it may nevertheless be possibly descended.—Road sides.—July.—Biennial.

* LACTUCA SANGUINEA.

Wood Lettuce.

L. foliis amplexicaulibus, runcinatis, subtus glaucis, carina filamentosa; floribus paniculatis.

Leaves clasping, runcinate, glaucous underneath, with the midrib filamentous; flowers paniced.

Stem erect, smooth, two or three feet high, mostly of a dark reddish purple colour. Leaves all clasping, runcinate, the lobes

somewhat toothed, glaucous underneath, smooth, with the midrib filamentous or hairy. Flowers paniced with short, acuminate bractes. Calyx dark purple, cylindrical, tapering upwards, imbricated, the inner scales scarious upon the margin; ligules of the corolla crimson; down stipitate; seeds oblong oval, blackish, with a middle rib and dilated margin.—In dry woods.—July, August.—Biennial?

Lactescent like the other species. The filaments on the back of the leaf are sometimes wanting, but generally present.

304. HIERACIUM.

HIERACIUM VENOSUM. L. *Veinyleaved Hawkweed.*

Scape naked, branching; calyx smooth; leaves obovate, somewhat acute, entire, ciliate, their veins coloured. *Willd.*

A singular and beautiful plant, found upon dry hills and pastures. Leaves radical, spreading on the ground, narrow-obovate, elegantly variegated with dark red veins and dots, downy underneath, somewhat ciliate, tapering into a short, hairy petiole. Scape erect, slender, one or two feet high, of a dark brown colour, smooth, commonly naked, but sometimes furnished with a small leaf or two. Flowers paniced, on very slender stalks, yellow.—June, July.—Perennial.

HIERACIUM MARIANUM. *Rough Hawkweed.*

Stem erect, villous; leaves elliptic-obovate, with stiff bristles, villous on the midrib, the lower ones slightly toothed; peduncles and calyx downy.

Syn. HIERACIUM SCABRUM. Mx.

Stem two feet high, very rough. Flowers yellow, in a small irregular panicle at top, the stalks and calyx hispid with glandular hairs.—Borders of woods.—August.—Perennial.

HIERACIUM KALMII. L. *Kalm's Hawkweed.*

Stem erect, many flowered; leaves lanceolate, toothed; peduncles downy. *L.*

Stem erect, tall, nearly smooth, downy at top. Leaves alternate, sessile, oval-lanceolate, acuminate, with acute, diverg-

ing teeth. Flower stalks axillary and terminal, round, covered with down. Flowers erect, yellow. Calyx somewhat downy, with linear-lanceolate scales.—Borders of fields.—August.—Perennial.

HIERACIUM PANICULATUM. Willd. Panicked Hawkweed.

Smoothish; stem erect, leafy, panicked, whitish-downy below; pedicels capillary; leaves lanceolate, naked, toothed, membranous.

Found in damp, shady woods. Stem slender, a foot high. Leaves thin, sessile, lanceolate, slightly toothed, paler beneath. Panicle much branched, its branches elongated and very slender. Flowers numerous, small, yellow.—Waltham.—August.—Perennial?

305. KRIGIA.

KRIGIA VIRGINICA. Willd.

Scape one flowered; leaves lanceolate, lyrate, smooth.

Syn. HYOSERIS VIRGINICA. L.

One of the smallest compound flowers. The first leaves are generally elliptical or lanceolate. The rest are pinnatifid or lyrate, with scattered, irregular segments. Scapes erect, long and slender, a little striated, smooth, with a few, fine, scattered hairs. Flowers small, solitary. Calyx composed of a simple row of smooth leaflets. Corolla yellow. Seeds oblong, blackish, crowned with a border of five short, roundish, membranous scales, separated by bristles several times their length.—On sandy hills and road sides, flowering in June and July.—Annual.

306. SONCHUS.

SONCHUS OLERACEUS. L. Common Sow-Thistle.

Peduncles downy; calyx smooth; leaves runcinate, toothed. *Sm.*

Appears late in the season, in every species of waste ground and rubbish. Stem erect, three feet high, round, smooth, brittle, hollow. Leaves smooth, toothed and lobed in a runcinate manner, clasping the stem, their lobes bordered with teeth or

spines. Peduncles axillary and terminal, covered with a white, fine, deciduous down. Calyx smooth, swelling out at base. Corolla yellow. Flowers about half the size of the dandelion. Down fine and smooth.—September.—Annual.

* *SONCHUS SPINULOSUS.*

Prickly Sea Sonchus.

S. foliis amplexicaulibus, oblongis, undulatis spinulosis; floribus subumbellatis.

Leaves clasping, oblong, waved, prickly; flowers somewhat umbelled.

Stem smooth, few angled, two feet high. Leaves smooth, oblong, heart shaped at base, the lobes curling backward and clasping the stem, the edges waved, acutely toothed, the teeth ending in short spines. Flower somewhat umbelled, small, yellow. Peduncles smooth, sometimes furnished with very few glandular hairs. Calyx swelling at base, smooth, its scales acuminate and appressed.—Salt marshes.—August.—Annual.

SONCHUS ACUMINATUS. Willd.

Blue Sonchus.

Peduncles somewhat scaly; flowers paniced; lower leaves runcinate, upper ones ovate, acuminate, petioled, toothed in the middle.

This plant differs from the species before described, in having blue flowers. These are rather small and numerous.—Low grounds, rare.—August.—Biennial.

307. ARCTIUM.

ARCTIUM LAPPA. L.

Burdock.

Leaves heart shaped, unarmed, petioled. *L.*

No plant is better known than this. Its very large, heart-shaped, wavy leaves cover the ground for some extent around it. The stem, which rises three or four feet, is branching, round, furrowed, and rough. Flowers numerous, terminal, purple. This plant intrudes itself on every one's acquaintance by the sharp, firm hooks at the end of the calyx scales, which attach themselves to the clothes, and serve as a remarkable mechanism for dispersing the seeds.—Common in waste and cultivated ground.—July, August.—Perennial.

308. CNICUS.

CNICUS ARVENSIS. Willd. Canada Thistle.

Leaves sessile, pinnatifid, spinous; stem panicled; calyx ovate, its spines minute; down feathery. Sm.

Syn. *CARDUUS ARVENSIS*. Sm.

SERRATULA ARVENSIS. L.

This species is easily distinguished from the rest of our thistles by its small flowers, and its thornless calyx scales. It commonly forms beds by its perennial, creeping roots, and is exceedingly difficult to extirpate. The stems are two or three feet high, smooth, many flowered. Leaves alternate, sessile, pinnatifid, with numerous lobes, and very thorny. Flowers terminal, purple; the scales of the calyx ending in a short, weak bristle, rather than a spine. This plant seems to have come to us from the westward, where it is exceedingly troublesome. The name of Cursed thistle has been given it in England.—July.

* CNICUS GLUTINOSUS. Glutinous Thistle.

C. foliis pinnatifidis, laciniis divaricatis; calyce ovato, squamis muticis, glutinosis.

Leaves pinnatifid with divaricate segments; calyx ovate with unarmed glutinous scales.

Stem from four to six feet high, branching, more or less downy. Leaves sessile, somewhat clasping, more or less downy, pinnatifid; the segments subdivided, divaricating, spinous. Flowers small, deep purple, on slender stalks or branches. Calyx ovate; the scales appressed, glutinous on the back, of a brownish colour, connected by a white web, so as to appear speckled, ending in a short, softish point, which is longest in the uppermost.—In damp, rich soils.—August, September.—Biennial.

It is one of the handsomest of the genus.—Nearly allied to *Cirsium muticum* of Michaux, but appears to differ in its leaves and its *ovate glutinous* calyx.

CNICUS HORRIDULUS. Yellow Thistle.

Leaves sessile, pinnatifid, acutely cut, thorny; involucre many leaved, one flowered.

Stem fleshy, hollow, covered with long, fine wool. Leaves clasping, pinnatifid, woolly and hairy, their lobes rather short, ending in short rigid spines. Flowers large, axillary and terminal, invested at base by an involucre of linear leaflets, which are edged with short, firm thorns. Calyx oblong, its scales loosely erect, mucronated, ending in spines and connected by a web. Florets yellowish white. Anthers reddish.—Low fields &c.—Biennial.

CNICUS LANCEOLATUS. *Willd.*

Spear Thistle.

Leaves decurrent, pinnatifid, hispid; the segments divaricate; calyx ovate, villous; stem hairy. *Sm.*

Syn. CARDUUS LANCEOLATUS. L.

Very common by road sides and in waste ground, usually three or four feet in height. Stem upright, furrowed, hairy, and winged by the decurrent base of the leaves. Leaves white and woolly underneath, pinnatifid, half the lobes divaricated, tipped with long and very acute spines. Flowers terminal, purple, numerous, above the middle size. Calyx ovate, contracted to a small neck, its scales tipped with sharp, ascending spines, and connected with a downy web. Receptacle hairy. Seed down feathery.—Flowers from June to September.—Biennial.

CNICUS DISCOLOR. *Willd.*

Tall Thistle.

Leaves sessile, pinnatifid, hairy, downy underneath; the segments two lobed, divaricate, spinous; calyx globular, pubescent, with ovate, appressed scales, the spines spreading.

A very slender, erect thistle, five or six feet high. Leaves whitish-downy underneath; flowers small, purple.—About thickets.—August.—Biennial.

CNICUS PUMILUS. *Nutt.*

Pasture Thistle.

Stem hairy; leaves green on both sides, clasping, oblong-lanceolate and pinnatifid, the segments irregularly lobed, ciliated and spinous; calyx round-ovate, naked; scales spinous.

Very common in dry pastures and by road sides. Stem thick,

about a foot in height, with a few very large purple flowers.—August.—Biennial.

309. ONOPORDON.

ONOPORDON ACANTHIUM. *L.**Cotton Thistle.*

Calyx scales spreading every way, awl shaped; leaves ovate-oblong, sinuated, woolly on both sides. *Sm.*

Frequent in waste grounds, and readily distinguished from the other thistles by its white appearance and the large size of its leaves. Stem erect, tall, winged by the decurrent base of the leaves. Leaves oblong, broad, sinuated, toothed, and spinous, covered on both sides with a loose, white, cottony substance. Flowers purple. Calyx globose, wider than it is long, with lanceolate, spreading, cottony, spinous scales. Receptacle cellular, like a honeycomb. Down rough, short. The Cotton thistle was probably introduced from Europe.—It flowers in July and August.

310. LIATRIS.

LIATRIS SCARIOSA. *Willd.**Common Liatris.*

Stem simple, somewhat pubescent; leaves lanceolate, attenuated at both ends, smooth with a rough margin; flowers racemed, alternate, distant; calyx loose with spatulate scales, having a membranous, coloured margin.

*Syn. LIATRIS SQUARRULOSA. Mx.**SERRATULA SCARIOSA. L.*

A very beautiful plant, with a long, erect raceme of bright blue flowers.—In Danvers and other parts of Essex county.—August.—Perennial.

311. VERNONIA.

VERNONIA NOVEBORACENSIS. *Willd.**Vernonia.*

Leaves lanceolate, rough, serrulate; corymb fastigiate; scales of the calyx filiform at top. *Willd.*

Syn. *SERRATULA NOVEBORACENSIS. L.*

A tall plant, bearing a multitude of dark purple flowers, which turn nearly black in decay. Stem about four feet high, furrowed, purplish, branching at top. Leaves peduncled, lanceolate, finely serrate, acuminate, paler underneath. Flowers terminating the stem and branches, in a compound, flat topped corymb. Scales of the calyx ending in a fine, slender awn.—Found in moist situations.—September.—Perennial.

312. BIDENS.

BIDENS FRONDOSA. L. *Common Burr Marygold.*

Flowers discoid; outer calyx six times as long as the flower, its leaves ciliate at base; lower leaves pinnate, upper ones ternate, lanceolate, serrate. *Willd.*

A frequent and troublesome weed in corn fields, especially where the soil is moist. Stem smooth, three or four feet high. Lower leaves five-pinnate, sometimes ternate, leaflets lanceolate, serrate. Flowers terminal, erect, flosculous, surrounded by a large, leafy involucre or outer calyx. Florets small, yellow. Seeds oblong, flat, tipped with two barbed awns, by which they adhere to the clothes, and to the coats of animals.—August, September.—Annual.

BIDENS TRIPARTITA L. *Trifid Burr Marygold.*

Flowers discoid; outer calyx longer than the flower; seeds with three awns; leaves trifid.

Stem two or three feet high, branching; leaves opposite, mostly three parted with lanceolate, serrate segments; the lower leaves frequently pinnatifid, the upper ones in the American plant generally simple. Calyx short in comparison with the preceding. Seeds resembling those of the last with commonly a third short awn between the other two.—Swamps and ditches.—August.—Annual.

BIDENS CRYSANTHEMOIDES. Mich. *Large flowered Bidens.*

Flowers erect, radiate; outer calyx waved, much shorter than the ray; leaves lanceolate, serrate, connate.

The large, golden flowers of this plant are very conspicuous in wet situations in autumn. Its tops are usually eaten off when accessible to cattle, who appear fond of it. Stem erect, round, smooth. Leaves glabrous, lanceolate, slightly toothed, tapering at both ends, slightly connate at base. Flowers erect. Leaves of the outer calyx oblong, obtuse, waved up and down on the margin; those of the inner calyx shorter, oval, acute. Ray very large, spreading, yellow. Seeds with commonly four awns, in which circumstance our plant seems to differ from that of Michaux.—September, October.—Annual.

313. MIKANIA.

MIKANIA SCANDENS. *Willd.* *Climbing Mikania.*

Stem climbing, glabrous; leaves heart shaped, repand-toothed, acuminate, the lobes divaricate, unequal; flowers corymbed. *Willd.*

Syn. EUPATORIUM SCANDENS. Mich.

Stem twining, smooth. Leaves opposite, on long petioles, glabrous, somewhat triangular or halberd shaped, their lower half toothed, the upper tapering into a long, even, and very acute point. Branches opposite, axillary, bearing small, terminal corymbs. Flowers purplish white. Calyx with about four leaves, and as many florets.—Wet places.—August, September.—Perennial.

314. EUPATORIUM.

EUPATORIUM SESSIFOLIUM. *L.* *Sessile leaved Eupatorium.*

Leaves sessile, clasping, distinct, ovate-lanceolate, rounded at base, serrate, smooth; stem smooth. *Willd.*

An erect plant with corymbed flowers, as are all the subsequent species. Stem slender, smooth. Leaves opposite, closely sessile, circular at base, tapering to a very long, acute point, furnished with small teeth or serratures, and paler underneath. Peduncles downy. Flowers white, in a terminal corymb. Calyx containing about five florets.—Found in the woods at Roxbury.—August.—Perennial.

EUPATORIUM VERBENÆFOLIUM. *Mich.* *Vervain leaved Eupatorium.*

Leaves sessile, lance-oval, acute, obtusely cut-toothed, pubescent; calyxes pubescent, awnless, five flowered. *Mich.*

The name is taken from the resemblance of the leaves to the upper ones of the officinal Vervain. Stem round, downy at top. Leaves opposite, closely sessile, pointing upward, rounded at base, acute, but not acuminate like the last, the sides cut into very large, and rather blunt teeth. Corymb compound, terminal, pubescent. Flowers white.—Grows at Cambridgeport and elsewhere, in low ground.—August, September.—Perennial.

EUPATORIUM PUBESCENS. *Willd.* *Hairy Eupatorium.*

Leaves sessile, distinct, rough, veiny, the lower ones doubly serrate, the upper ones subserrate, stem panicled, pubescent, the branches fastigiata. *Willd.*

Stem hairy, two feet high. Leaves opposite, sessile, ovate, toothed, hairy. Upper leaves nearly entire, with a tooth or two at base, alternate? Branches of the corymb alternate? Calyx cylindrical, hairy; florets about five. In a swamp at West Cambridge.—July.

As it agrees prettywell with the character above quoted from Willdenow, I have assigned it to his species pubescens. The upper leaves in my specimens are all alternate. Should this character be found constant, it may deserve the name of *alternifolium*.

* EUPATORIUM OVATUM.

Ovate Eupatorium.

E. hirsutum, scabrum; foliis oppositis, sessilibus, ovatis, obtuse dentatis; corymbo fastigiato; calycibus sub-octofloris.

Hairy, rough; leaves opposite, sessile, ovate, obtusely toothed; corymb fastigiata, calyxes about eight flowered.

A stout, rough species, three or four feet high. Leaves perfectly ovate, the upper ones somewhat deltoid, all of them furnished with simple, obtuse teeth, rough and veiny. Corymb flat, topped with white flowers. Calyx imbricated with hairy, acute segments. Florets about seven or eight.—In low grounds at Sudbury, twenty miles from Boston.—July, August.—Perennial.

EUPATORIUM PERFOLIATUM. L.

Thorough Wort.

Bigelow, Medical Botany, Pl. ii.

Leaves perfoliate-connate, downy. *L.*

Syn. EUPATORIUM CONNATUM. Mx.

The stems are erect, round, hairy, branched at top only. The leaves, which are perforated by the stem, are rather perfoliate than connate, since they have not the character of two leaves joined together, but of one entire leaf, having its four principal veins proceeding at right angles from the four quarters of the stem, two of them being situated in the place of the supposed junction. The upper leaves, however, are generally divided into pairs. The main leaves are acuminate, decreasing gradually in breadth from the stem, where they are widest, to the extremities. They are serrated, wrinkled, pale underneath, and hairy, especially on the veins. Flowers in corymbs with hairy peduncles. Calyx cylindrical, imbricate, the scales lanceolate, acute, hairy. Each calyx contains about twelve or fifteen florets, which are tubular, with five spreading segments, and surrounded with a rough down. The stamens in each consist of five soft filaments, with blackish anthers united in a tube. Style filiform, divided into two branches, which project above the flower. Seeds oblong on a naked receptacle.—In low lands and meadows, common.—August.—Perennial.—The whole plant is bitter and used as a tonic.

EUPATORIUM PURPUREUM. L.

Trumpet Weed.

Leaves petioled, four or five in a whorl, ovate-lanceolate, serrate, wrinkled and veiny, somewhat rough; stem fistulous. *Willd.*

A tall plant, growing about the borders of thickets in wet land. Stem five or six feet in height, straight, round, purplish,

hollow throughout its whole length, its tube not being interrupted by joints. Leaves in whorls of four, five, or six; ovate, rugged with veins, acute. Flowers purple, in a large, branching, terminal corymb. Calyx containing about eight florets, with very long styles.—August, September.—Perennial.

EUPATORIUM VERTICILLATUM. Muhl. Whorled Eupatorium.

Leaves petioled, in whorls of three or four, ovate-lanceolate, wedge shaped at base, unequally serrate, smoothish; stem solid, smooth. *Willd.*

Syn. EUPATORIUM PURPUREUM. Mich.

A very tall species, much resembling the last in habit. Stem smooth, round. Leaves about four in a whorl, large and spreading, serrate, the lower part entire, and tapering to the petiole. Flowers in a large, terminal corymb. Flowering branches also proceed from the axils of the upper leaves. Calyx whitish. Corollas purplish.—Wet thickets.—August, September.—Perennial.

Between this and the foregoing there are several intermediate species, or more probably varieties.

§ *Subgenus* ————. *Calyx simple.*

EUPATORIUM AGERATOIDES. Willd. Nettle leaved Eupatorium.

Stem glabrous; leaves on long petioles, subcordate-ovate, acuminate, toothed, smoothish; calyx about twenty flowered.

Syn. EUPATORIUM URTICIFOLIUM. Mx.

Stem round, smooth. Leaves opposite, the lower ones on long petioles, sharply serrate, acuminate, somewhat hearted, nearly smooth. Flowers numerous, small, white, in small panicled corymbs or heads. Calyx mostly simple with from twenty to thirty florets.—About the base of the White mountains.—Mr. Little.—August.

EUPATORIUM AROMATICUM. Willd. Aromatic Eupatorium.

Stem roughish; leaves petioled, ovate, acute, obtusely toothed, roughish; calyx about twenty flowered.

A beautiful species with a small corymb of large, white, aromatic flowers. Compared with the preceding it has a rougher stem, shorter petioles, leaves not sharply toothed nor acuminate, flowers more than twice the size, but much fewer in number.—Dry woods, Roxbury.—August.—Annual?

SUPERFLUA.

315. ARTEMISIA.

ARTEMISIA CANADENSIS. *Mx.* *Sea Wormwood.*

Stem decumbent; leaves linear-pinnatifid; branches bearing spikes; flowers hemispherical, calyx scarious.

Stem somewhat woody, smooth or pubescent. Leaves compounded of linear segments, once or twice pinnatifid. Flowers small, very numerous, in terminal panicles resembling spikes.—On the sea beach, Plum island.—August.—Perennial.

316. CONYZA.

CONYZA CAMPHORATA. *Muhl.* *Spicy Conyza.*

Leaves ovate-lanceolate, somewhat pubescent, acute, serrate, serratures mucronate; flowers in crowded corymbs.

Syn. ERIGERON CAMPHORATUM. *L.*

CONYZA MARYLANDICA. *Mich.*

An erect, rather succulent plant, of low stature. Stem thick, fleshy, pubescent. Leaves alternate, sessile, ovate. Branches axillary, leafy, bearing close corymbs of oblong, purple flowers. The plant, when bruised, exhales a strong, spicy, but rather disagreeable odour.—Salt Marshes.—Cambridgeport.—August.

317. GNAPHALIUM.

GNAPHALIUM MARGARITACEUM. *Common Life Everlasting.*

Herbaceous; leaves linear lanceolate, acuminate, alternate; stem branched at top; corymbs fastigiate. *L.*

No object in the fields is better known than the dry, pearly, and almost incorruptible heads of the Life everlasting. The

whole plant has a white appearance derived from its downy covering. Stem erect, round, from one to two feet high, woolly. Leaves numerous, sessile, growing without order round the stem, green above with a slight down, whitish, with very thick down, or wool, underneath. Branches forming a flat topped corymb of crowded flowers. Calyx hemispherical, its scales of a clear white. Florets five cleft, yellow. The plant has a slight, pleasant odour.—August.—Perennial.

GNAPHALIUM POLYCEPHALUM. *Fragrant Life Everlasting.*

Herbaceous, erect; leaves lanceolate, woolly beneath; stem woolly, paniced; corymbs terminal, crowded.

A branching, downy, strong scented species. Root perpendicular, tapering. Stem covered with whitish woolly down and much branched. Leaves lanceolate, sessile, woolly underneath, green and somewhat downy above. Flowers ovate, in thick terminal clusters. Calyx scales imbricate, ovate and whitish. Florets funnel form, yellow at top. The scent is much stronger than in the last species.—Fields, salt marshes.—August, September.—Annual.

GNAPHALIUM PLANTAGINEUM. *L.*

Mouse Ear.

Shoots procumbent; stem simple; radical leaves oval, obtuse, mucronated, three nerved; flowers diœcious.

This species flowers early, and is pretty common in pastures and dry hills. The whole plant is at first covered with white, cotton-like down. The root sends out a number of runners furnished with oval leaves, exceeding the rest considerably in size, rounded at the end, and tapering into a footstalk. Their upper surface is at first downy, but becomes nearly glabrous, and of a dark brown colour. Stem leaves oblong, woolly, sessile. Stem undivided, terminating in a simple corymb of white, woolly flowers; barren florets white with revolute segments, anthers brownish. Fertile flowers on separate plants, cylindrical.—April, May.—Perennial.

GNAPHALIUM ULIGINOSUM. L.

Cudweed.

Stem herbaceous, branching, diffuse, woolly; leaves linear-lanceolate, narrowed at both ends, downy; flowers terminal, crowded. *Willd.*

A small, branching, whitish plant. Stems spreading, subdivided, covered with white, woolly down. Leaves alternate, linear-lanceolate, less woolly than the stem. Flowers in dense, terminal corymbs or heads. Scales of the calyx yellowish. Road sides.—August.—Annual.

318. CHRYSANTHEMUM.

CHRYSANTHEMUM LEUCANTHEMUM. L.

White Weed.

Leaves clasping, oblong, blunt, cut, pinnatifid at base; the radical ones on footstalks, obovate. *Sm.*

This plant, which has come to us, no doubt, from Europe, is exceedingly frequent and troublesome in pastures and mowing land. Stems about two feet high, round, furrowed. Lower leaves petioled, inversely ovate, serrate, and cut; upper ones sessile, irregularly pinnatifid and toothed. Flowers terminal, solitary, large, and flat. Calyx closely imbricated. Disc yellow; ray white, consisting of many oval, oblong ligules, ending in three teeth.—June, July.—Perennial.

319. INULA.

INULA HELENIUM. L.

Elecampane.

Leaves clasping, ovate, wrinkled, downy underneath; scales of the calyx ovate.

A tall, rank, yellow flowering plant. Stem three or four feet high, straight, branching at top. Leaves very large, ovate, serrate, veiny and downy beneath, those of the root petioled, those of the stem clasping. Flowers somewhat like those of Helianthus. Florets of the ray numerous, yellow, linear, three toothed at the end.—Road sides, introduced from Europe.—July, August.—Perennial.

320. ERIGERON.

ERIGERON BELLIDIFOLIUM. Willd. Robin's Plantain.

Hairy; radical leaves obovate, subserrate, stem leaves distant, lanceolate, entire; stem about three flowered; ray elongated.

Syn. ERIGERON PULCHELLUM. Mx.

Stem erect, simple, hairy, furrowed. Root leaves spatulate or obovate, sessile, hairy, with a few teeth toward the end. Stem leaves oblong, half clasping, hairy, entire, waved, the upper ones acute. Flowers few in number, on short, simple, hairy stalks. Bractes ovate, acuminate. Calyx cylindrical, hardly imbricated, its scales acute, appressed. Ligules of the ray numerous, linear, pale purple. Disc yellow, shorter than the ray. Receptacle naked, dotted.—Dry fields, Cambridge.—Perennial.

*ERIGERON INTEGRIFOLIUM. Entire leaved Erigeron.

E. caule simplici, folioso, glabro; foliis lanceolatis, integris, trinerviis; floribus corymbosis; calyce hemisphærico, squamis acutis.

Stem simple, leafy, smooth; leaves lanceolate, entire, three nerved; flowers corymbed; calyx hemispherical, with acute scales.

Stem two feet high, simple, furrowed with a barely perceptible pubescence. Leaves lanceolate, slightly clasping, three nerved, entire with rarely a tooth or two in the lower ones, pubescent. Peduncles somewhat leafy, branched, furrowed, rough. Calyx hemispherical, flattened, the leaflets acute, appressed. Ray crowded, white.—Sides of roads and woods.—June to August.—Perennial.

ERIGERON STRIGOSUM. Willd. Hairy Erigeron.

Hairy or bristly, leaves lanceolate, with a few large teeth in the middle or entire; flowers in a panicled corymb.

Stems erect, channelled, hairy, with loose scattered bristles. Leaves sessile, lanceolate, with remote teeth and scattered hairs:

Flowers on leafy, branched, hairy peduncles. Calyx flat-hemispherical; leaflets pilose with long flaccid points. Ray capillary, longer than in the last species, white.—About woods and fences.—July, August.—Perennial.

ERIGERON PHILADELPHICUM. L. *Philadelphia Flea Bane.*

Stem many flowered; leaves lanceolate, subserrate, those of the stem half clasping; florets of the ray capillary, as long as the disc. *L.*

Stem erect, two or three feet high, much branched at top, the branches somewhat downy. Leaves lanceolate or oblong, sessile and partly clasping, the lower ones toothed. Flowers numerous, panicled, erect. Calyx flattened or hemispherical. Florets of the margin very numerous and fine, pale blue or purplish. Road sides, flowering in July and August.—Perennial.

§ *Subgenus CÆNOTUS.* *Calyx oblong; ray minute; down simple.*

ERIGERON CANADENSE. L. *Annual Flea-Bane.*

Stem hairy; flowers panicled; leaves lanceolate, lower ones serrate. *Sm.*

One of the most hardy and common annual weeds. It propagates itself rapidly, and since the discovery of America, has been introduced, and spread through most countries in Europe. Stem erect, furrowed, very hairy, branching. Leaves linear-lanceolate, edges rough and ciliate. Flowers small, of no beauty, very numerous, arranged in a sort of racemes on the branches. Calyxes cylindrical, longer than they are wide, somewhat imbricate. Ray very short and obscure, white, crowded, erect. In pastures, road sides, and cultivated grounds, varying in height from one to four feet, according to the soil.—August.

321. SOLIDAGO.*

SOLIDAGO LANCEOLATA. L. *Spear leaved Golden Rod.*

Stem glabrous, branching; leaves lance-linear, en-

* This genus is exceedingly abundant in the United States, and with the genus *Aster* predominates in August and September over all other vegetables.

ture, three nerved, glabrous ; corymbs terminal ; ligules as high as the disc. *Ait.*

This species of golden rod is distinguished from the succeeding ones, by its inflorescence. Stem tall, leafy, branching. Leaves numerous, long, and narrow, marked for their whole length with three distinct nerves, very rough on the edge. Flowers yellow, in large, flat topped corymbs, composed of small heads. Ray very short and obscure. The whole plant is pleasantly aromatic.—Woods and road sides, in low ground.—August, September.—Perennial.

SOLIDAGO ODORA.

Sweet scented Golden Rod.

Bigelow, Medical Botany, Pl. xx.

Stem nearly smooth, leaves linear lanceolate, entire, smooth, with a rough margin, and covered with pellucid dots. Racemes panicled, one sided.

This has a smooth appearance, and is among the smaller species of its family. The root is woody, much branched and creeping. Stem slender, from two to three feet high, smooth or slightly pubescent below, pubescent at top. Leaves linear lanceolate, closely sessile, broad at base, entire, acute, with only the midrib distinct, rough at the margin but otherwise smooth, and covered with pellucid dots like *Hypericum perforatum*. The flowers grow in a compound, panicled raceme, with each of its branches supported by a small leaf. These branches or peduncles are very slender and rigid, each giving off a row of ascending, downy pedicels, with small linear bractes at their bases. Scales of the calyx oblong, acute, smooth, or slightly pubescent, the lower ones shorter and closely imbric-

then in flower. Among the species there are a vast variety of hybrids and subspecies which the labours of botanists have not yet been able to reduce under permanent characters, though names without number have been applied to fugitive varieties. The single species found in Great Britain is acknowledged to be one of the most difficult plants "to define or understand." The same remark is applicable to a great part of the American species. In this work I have inserted only the more distinct or leading species, from which a great part of the others in this vicinity are probably descended.

cating the rest. Florets of the ray few, with oblong, obtuse ligules. Those of the disc funnel shaped, with acute segments. Down simple to the naked eye, feathery under the microscope. Seeds oblong.—Woods and fields.—September.

The leaves have a very pleasant anisate odour and yield by distillation a fragrant, volatile oil.

SOLIDAGO ALTISSIMA. L.

Tall Golden Rod.

Stem erect, hairy; leaves lanceolate, the lower ones deeply serrate, rough, wrinkled; panicle leaning to one side. *Willd.*

The varieties of this tall, well known weed, are very frequent about the borders of fields. Stem erect, stiff, rough, and hairy, branching at top. Leaves numerous, sessile, lanceolate, rough, irregularly veined, serrate or toothed, the serratures divergent. Panicle consisting of many recurved branches, with the flowers tending upward; the whole inclining to one side. Flowers numerous, yellow.—September.—Perennial.

SOLIDAGO NEMORALIS. Willd.

Grey Golden Rod.

Stem erect, downy; stem-leaves lanceolate, nearly entire, root leaves somewhat wedge-shaped, serrate; racemes panicled, one sided.

Common in dry, sandy fields, where it appears as if stunted by drought. The whole herb has a greyish, downy or pulverulent appearance. Leaves of the root obovate, serrate, those of the stem lanceolate, scarcely serrate. Panicle small, leaning, yellow.—August, September.—Perennial.

SOLIDAGO MACROPHYLLA. Pursh. Large leaved Golden Rod.

Leaves roundish-ovate, acuminate, narrowed at base, sharply and unequally serrate; racemes axillary.

This has broader leaves than any of the other species. They are generally smooth, sometimes rough, paler underneath, ovate, roundish or elliptical, the upper ones sometimes lanceolate, all much attenuated at base, edged with large, acute, diverging serratures. Flowers yellow, in short axillary racemes.—In woods, near the White mountains. Mr. Locke.—August.

SOLIDAGO CÆSIA. *Ait.* *Blue stemmed Golden Rod.*

Stem glabrous; leaves lanceolate, acuminate, serrate, glabrous, paler underneath; racemes axillary.

An elegant species, remarkable for the brightness and variety of its colours. Stem slender, smooth, of a dark bluish colour, somewhat flexuous. Leaves alternate, lanceolate, tapering to a long point, smooth, green above, pale, and somewhat glaucous underneath. Racemes numerous, situated, one in the axil of each leaf, for a great length upon the stem. Flowers of a very bright and durable yellow.—Woods.—September.—Perennial.

SOLIDAGO LÆVIGATA. *Ait.* *Marsh Golden Rod.*

Stem erect, smooth; leaves lanceolate, fleshy, entire, smooth in all parts; racemes panicled, erect; peduncles scaly, villous; ligules elongated. *Ait.*

A tall, rank inhabitant of the borders of salt marshes, where its large, yellow tops are very conspicuous in September. Stem thick, round, smooth, leafy, from four to six feet high. Leaves thick, fleshy, clasping, perfectly smooth, and without serratures. Racemes numerous, crowded, somewhat recurved. Flowers large, yellow, the ligules of the ray nearly as long as the disc.—Perennial.

SOLIDAGO BICOLOR. *L.* *White Golden Rod.*

Stem and leaves hairy; leaves elliptical, the lower ones serrate; branches bearing leaflets; racemes erect; calyx leaves obtuse. *Ait.*

This species differs considerably in its aspect from the preceding ones. Stem erect, nearly simple, pubescent, especially toward the top. Leaves sessile, lance-oval, rough, somewhat hairy. Racemes axillary, crowded, numerous. Flowers small, without beauty. Disc yellow. Ray very short, obscure, white.—Dry woods.—Cambridge.—Perennial.

SOLIDAGO VIRGAUREA. *L.* *European Golden Rod.*

Stem erect, round, pubescent at top; stem leaves lanceolate, serrate, the lower ones oval, attenuated at both ends; racemes erect, ray elongated.

This plant is the only species common to the two continents. It is distinguished from those previously enumerated by its much larger flowers. Stem flexuous, from one to three feet high. Leaves elliptic or lanceolate, often with a long narrow base, serrate. The upper ones nearly entire. Panicle of large yellow flowers with from five to ten rays.

Variety β. alpina. A few inches in height with obovate or lanceolate, mostly entire leaves, and a few large flowers.

In woods on the sides of the White mountains. Var. *β*, on the alpine summits. The last resembles *S. Cambrica* of Hudson.

322. SENECEO.

SENECEO VULGARIS. *L.*

Common Groundsel.

Flowers without ray, scattered; leaves pinnate-sinuate, clasping, toothed. *Sm.*

A weed about houses, rubbish, and cultivated grounds. Stem erect, branching, leafy, smooth. Leaves alternate, pinnatifid, and toothed, those of the stem clasping. Flowers terminal, scattered, yellow. Calyx somewhat cylindrical, calyculated, scaly, the scales acute and black at the tip. Flowers floscular. Down sessile, white.—All summer.—Annual.

SENECEO HIERACIFOLIUS. *Mich.*

Hawkweed Groundsel.

Flowers without ray; leaves clasping, oblong, acute, unequally torn and serrated; calyxes oblong, smooth, bristly at base.

A rank, tall, annual plant, called *Fire weed* in many parts of the interior, from the readiness with which it appears in grounds newly burnt over. Stem three feet high, fleshy, succulent, branching at top. Leaves large, clasping the stem, deeply and irregularly divided, and acutely toothed. Flowers terminal, erect, crowded. Calyx cylindrical, its base swelling, and invested with many small leaves or bristles. Florets small, pale, gradually filling the calyx. The whole plant has a strong, nauseous odour.—Road sides.—August, September.—Annual.

SENECEO AUREUS. *L.*

Golden Senecio.

Flowers radiate; radical leaves crenate, heart-shaped,

petioled ; upper ones pinnatifid, lyrate ; peduncles incrassated, somewhat umbelled.

This is a handsome species, and makes a fine appearance in meadows, in May and June. Stem upright, simple, smooth, from one to three feet high. Leaves of the root on slender foot-stalks, heart-shaped, rounded, crenate, smooth ; middle leaves of the stem lyrate and crenate ; upper ones pinnatifid. Corymb terminal, somewhat umbelled, the flower stalks thickening upward. Calyx smooth, dark, often striped. Flowers yellow. Ligules oblong, spreading.—Perennial.

SENECIO OBOVATUS. *Willd.*

Obovate Senecio.

Flowers radiate ; radical leaves obovate, crenate-serrate, petioled ; stem leaves pinnatifid, toothed ; peduncles elongated ; somewhat umbelled.

Resembles the foregoing species closely ; but the root leaves are obovate, and the peduncles not incrassated.—Meadows, Danvers. Dr. Nichols.—June.

SENECIO BALSAMITE. *Willd.*

Oblong Senecio.

Flowers radiate ; radical leaves oblong, serrate, petioled ; upper ones lyrate or pinnatifid ; peduncles somewhat umbelled.

The taste of the root in this and the two preceding species, resembles that of *Aralia nudicaulis*. This is smaller than the others, and has distinctly oblong root-leaves.—In dry, rocky pastures, Stoneham, near the marble quarry.—June.

323. ASTER.*

ASTER SOLIDAGINEUS. *Mich.*

White topped Aster.

Leaves linear-lanceolate, obtuse, entire, obsoletely three nerved, rough on the margin ; corymb fastigiate ; flowers sessile, aggregate, five rayed.

Syn. CONYZA LINIFOLIA. L.

An early species, with white flowers. Stem simple, smooth. Leaves oblong, narrow, obtuse at the end, tapering at base, gla-

* The remarks made under the head of *Solidago*, apply with equal force to the genus *Aster*.

brous, with the margin rough. Flowers in a flat topped corymb, collected in sessile tufts. Calyx oblong, imbricated, the scales obtuse, whitish, with green tips. Ligules of the ray oblong, white, five in number, by which circumstance the plant varies from its genus.—Woods.—July.—Perennial.

ASTER LINARIFOLIUS. *L.* *Savory leaved Aster.*

Leaves linear, entire, mucronated, rough, carinated; peduncles leafy. *L.*

A rough, woody plant, growing in bunches, about a foot high. Stems decumbent, rigid, purplish, covered with white down. Leaves numerous, linear, obtuse, with a small point, very rough and rigid, upright, but reflexed as the plant grows old, without nerves or dots. Peduncles few, near the top, alternate, short, furnished with small leaves, one flowered. Flowers purple.—Woods and dry hills.—August, September.—Perennial.

ASTER SUBULATUS? *Mx.* *Annual Sea Aster.*

Smooth; stem fistulous, paniced; leaves linear, the upper ones subulate; calyx cylindrical; ray minute.

Stem about two feet high, smooth, fleshy, somewhat reddish. Leaves linear-lanceolate, somewhat clasping, smooth, with a very little roughness at the edge. Branches very numerous and much divided, a small one frequently issuing between a leaf and the main branch in its axil. Flowers numerous. Calyx cylindrical, its scales long, acute, appressed. Ray very short, bluish white. Disc yellow.—Salt marshes.—September.

This plant may possibly be different from the *A. subulatus* of Michaux, whose description is imperfect. The name, however, is retained by our other botanists. Mr. Nuttall properly notices its affinity to *Conyza*.

ASTER SALICIFOLIUS. *Ait.* *Willow leaved Aster.*

Leaves linear-lanceolate, entire, glabrous; calyxes imbricated, lax; stem smooth. *Ait.*

A very tall, slender species. Stem five feet high, smooth, somewhat flexuous. Leaves long, linear, acute, entire, sessile, smooth, with a rough edge. Branches alternate, slender, smooth.

Flowers on short stalks, blue.—Found in the woods on Concord turnpike, Cambridge.—September.—Perennial.

ASTER CYANEUS. C. Muhl. *Blue flowered Aster.*

Leaves ovate-oblong, acute, clasping, cordate, serrate; stem panicled, glabrous; scales of the calyx lanceolate, closely imbricate. *Willd. sub. syn.*

Syn. ASTER AMPLEXICAULIS. Willd.

This is one of the most common and beautiful species. Stem erect, perfectly smooth. Leaves oblong, tapering to an acute point, smooth, and even, with a rough edge, slightly serrate about the middle, clasping, the lower ones contracted at base. Branches of the panicle furnished with a few small leaflets. Flowers on distinct peduncles, purplish blue.—Borders of woods and fields.—August.—Perennial.

ASTER UMBELLATUS. Ait. *Umbelled Aster.*

Leaves lanceolate, entire, narrowed at base, acuminate, rough on the margin; stem simple, corymbed at top; calyx scales lanceolate, lax. *Willd.*

Syn. ASTER AMYGDALINUS. Mich.

A very tall, erect species, with white flowers. Stem four or five feet high, furrowed, smooth, sometimes rough at top, leafy. Leaves numerous, large, lanceolate, rough at the edge, paler underneath. Stem branching at top into a large, compound, flat topped corymb. Calyx scales lanceolate, obtuse. Ray of a middle size, white.—In low grounds.—August, September.—Perennial.

ASTER NOVÆ ANGLIÆ. L. *New England Aster.*

Leaves lanceolate, clasping, entire, appendaged at base; stem hairy, straight; flowers terminal, crowded; calyx scales loose, coloured, lanceolate, longer than the disc. *Willd.*

A tall, and very beautiful plant. Stem three feet high, brown, very hairy. Leaves very numerous, linear-lanceolate, entire, acute, continued at base into a pair of small, rounded lobes, clasping the stem. Flowers large, on short stalks, crowded at

the top of the stem. Calyx scales linear-lanceolate, of a dark brown on the inside. Ray of a deep purple, crowded.—Road sides, South Boston, Brookline, &c.—September.—Perennial.

ASTER MISER. *L.* *Small flowered Aster.*

Leaves sessile, lanceolate, serrate, smooth; calyx imbricated with acute scales; disc equal to the ray; stem pubescent.

A variable species with small, white flowers.—Dry fields and road sides.—July, August.—Perennial.

ASTER DUMOSUS. *L.* *Bushy Aster.*

Leaves linear, glabrous; those of the branches very short; branches paniced; calyx cylindrical, closely imbricate.

A polymorphous white Aster, with a yellow disc, which turns brown, and the ray sometimes approaching to violet.

ASTER DIFFUSUS. *Ait.* *Spreading Aster.*

Leaves elliptic-lanceolate, serrate, glabrous; branches spreading; calyxes imbricate, stem pubescent. *Ait.*

A common, bushy Aster, with a profusion of white flowers. Stem branching, slightly pubescent. Branches numerous, long and slender, spreading, leafy, many flowered. Leaves lanceolate, rough at the edge, slightly serrate in the middle; those of the branches small, entire. Flowers small, very numerous, somewhat racemed, white.—Woods and road sides.—August, September.—Perennial.

ASTER CONYZOIDES *Willd.* *Conyza Aster.*

Leaves oblong, three nerved, narrowed at base, acute, the upper ones sessile, nearly entire, the lower ones petioled, serrate; stem simple, corymbed at top; calyx cylindrical, squarose; rays five, short.

Stem mostly smooth. Lower leaves frequently obovate or spatulate. Calyx of whitish scales with green tips as in *A. solidagineus*. Ray white.—Woods.—July, August.—Perennial.

ASTER ACUMINATUS. *Mx.*

Acuminate Aster.

Leaves broad-lanceolate, narrowed and entire at bottom, serrate, acuminate; stem simple, flexuous, angular, panicle corymbose, divaricately dichotomous; scales of the calyx lax, linear, shorter than the disc.

Stem rough, pubescent. Leaves shortly petioled, narrowed for a great length at base, the edges furnished with remote, divergent teeth, the point long, acuminate. Corymb terminal, with a few rather large white flowers.—In old woods, New-Hampshire and Maine.—August.—Perennial.

ASTER PUNICEUS. *L.*

Red stalked Aster.

Leaves clasping, lanceolate, serrate, rough; branches panicled; calyx lax, longer than the disc; stem hispid. *Ait. abr.*

A tall, handsome plant. Stem rigid, angular, flexuous, covered with stiff hairs, often, but not always red, three feet high. Leaves lanceolate, somewhat clasping, tapering at both ends, acuminate, furnished with large serratures in the middle, rough on the margin and upper surface. Branches panicled, with blue flowers, rather above the middle size. Calyx leaves uniform.—On the Dedham turnpike, Roxbury, and elsewhere.—September.—Perennial.

ASTER AMPLEXICAULIS. *Mich.*

Clasping Aster.

Leaves clasping, nearly perfoliate, oblong-heart shaped, not contracted below, entire; panicle lax, few flowered. *Mich.*

Stem erect or ascending, a little downy and rough. Leaves numerous, alternate, rough, somewhat waved on the edge, oblong, tapering to a bluntish point, broad at base, and clasping quite round the stem. Branches few, near the top, slender, furnished with several minute, clasping leaflets. Flowers erect, somewhat remote, blue.—Woods, Brighton.—September.—Perennial.

ASTER DIVERSIFOLIUS. *Mich.*

Various leaved Aster.

Leaves downy, slightly serrate and waved, the low-

er ones oblong-heart shaped, with winged petioles, upper ones oval lanceolate, clasping; stem hipid, panicled; branchlets leafy, one flowered, tending to one side.

Syn. *ASTER UNDULATUS.* *Ait.*

This species is remarkable for the gradation of its leaves from one distinct form to another. Stem pubescent, rough. Lower leaves oblong-heart shaped, pointed, serrate, downy underneath, supported on long petioles, which are winged or dilated at the base. Middle leaves panduriform, clasping. Upper leaves ovate or lanceolate, nearly entire, clasping. Panicle lax, with slender branches, covered with small leaves. Peduncles generally, but not always, inclining one way. Flowers blue.—August, September.—Perennial.

ASTER LEVIS. *Willd.*

Smooth Aster.

Leaves somewhat clasping, remote, oblong, entire, shining, those of the root subserrate; branches simple, one flowered; calyx imbricated; the leaflets somewhat wedge-shaped, acute, thickened at tip; stem smooth, angular.

A smooth plant throughout, with somewhat fleshy leaves and large purple flowers.—In wet grounds.—September, October.—Perennial.

ASTER CORNIFOLIUS. *Muhl.*

Cornel leaved Aster.

Leaves oblong-ovate, acuminate, entire, petioled, smooth, rough on the edge; stem smooth, panicle few flowered; calyxes somewhat imbricated. *Willd.*

A pretty early species. Stem erect, glabrous. Leaves on very short petioles, narrow-oval, acute at base, acuminate at point, nearly smooth, the margin entire, rough, and slightly ciliated, the under surface pale. Panicle few flowered. Flowers white.—Found in woods.—July, August.—Perennial.

ASTER CORDIFOLIUS. *L.*

Heart leaved Aster.

Leaves heart-shaped, hairy beneath, sharply serrate;

petioles winged; stem paniced, hairy; calyxes loosely imbricate. *Willd.*

Stem erect, somewhat flexuous, in some plants a little hairy, in others quite smooth. Leaves heart-shaped, with a deep sinus, acutely serrate, acuminate, downy underneath. Petioles with a membranous edge. Panicle terminal, many flowered. Flowers small, purplish white, the disc varying from red to yellow.—Woods.—September.—Perennial.

ASTER CORYMBOSUS. *Ait.*

Corymbed Aster.

Leaves ovate, sharply serrate, acuminate, the lower ones heart-shaped, petioled, naked; stem ending in a fastigate corymb; branches hairy; calyxes oblong, imbricate, its scales closely pressed. *Willd.*

A pretty large, white, flowering plant. Stem smooth, frequently of a dark reddish colour. Lower leaves heart-shaped, petioled, smooth, toothed; upper ones ovate, acuminate, subsessile. Flowers white, in a large, flat topped corymb, the branches of which are slightly pubescent.—Woods and shades, Roxbury, Brookline.—August.—Perennial.

ASTER MACROPHYLLUS.

Large leaved Aster.

Leaves ovate, petioled, serrate; the upper ones ovate-heart shaped, sessile; lower ones heart shaped, petioled; petioles somewhat margined; stem branching, diffuse; calyxes cylindrical, closely imbricate. *Willd.*

The root leaves are uncommonly large, heart shaped, serrate and acute, rather smooth. Stem furrowed, scarcely rough. Upper leaves sessile, ovate, a little hearted at base. Scales of the calyx closely appressed. Ray pale blue.—Woods.—September.—Perennial.

324. ANTHEMIS.

ANTHEMIS COTULA. *L.*

May Weed.

Receptacle conical, its scales bristle shaped; seeds without any border; leaves doubly pinnatifid, smoothish. *Sm.*

The road sides are full of the white blossoms of this common, annual weed, from midsummer to the end of autumn. Stem upright, smooth, much branched. Leaves alternate, sessile, nearly smooth, divided and subdivided into linear segments. Flower stalks solitary, striated. Calyx scales narrow, slightly margined. Florets of the ray white, spreading, a dozen or more in number. Disc yellow, convex. Receptacle nearly cylindrical. The plant has a strong, peculiar smell, and reputed medicinal virtues.

325. ACHILLEA.

ACHILLEA MILLEFOLIUM *L.* *Common Yarrow.*

Leaves bipinnatifid, hairy, their divisions linear, toothed, mucronate; stems furrowed. *Sm.*

Common Yarrow is a frequent inhabitant of dry pastures and fields. Stem erect, furrowed, hairy, branched at top. Leaves alternate, cut into a multitude of very small, linear subdivisions. Flowers white, forming a large, flat topped, crowded corymb. Calyx ovate. Disc convex. Florets of the ray four or five. The plant has a strong, penetrating taste and smell, and is used medicinally.—July, August.—Perennial.

FRUSTRANEA.

326. HELIANTHUS.

HELIANTHUS DIVARICATUS. *L.* *Small, rough Sunflower.*

Leaves opposite, sessile, ovate-oblong, three nerved; panicle dichotomous. *L.*

A shewy plant, not uncommon in woods and thickets, flowering in August and September. Stem erect, round, smooth, generally covered with glaucous powder. Leaves opposite, narrow-ovate, rounded at base, tapering to a long point, slightly serrate, three nerved, and very rough. Flowers yellow, in the wild plant but few in number, in the cultivated one numerous. Branches of the panicle either forked or three parted.—Perennial.

This plant has an agreeable, somewhat spicy odour.

327. COREOPSIS.

COREOPSIS TRICHOSPERMA. *Mich.* *Tickseed Sunflower.*

Leaves mostly five pinnate; leaflets lanceolate; re-

motely cut-serrate ; leaflets of the outer calyx ciliate ; ray entire ; seeds wedge form. *Mich abr.*

Stem about two feet high, glabrous. Leaves glabrous, pinnate. Leaflets five or seven, distant, linear-lanceolate, ending in a long, slender point, furnished with a few deep serratures or segments, the larger ones pinnatifid. The branches and leaves are opposite, the upper ones alternate. Flowers large, erect, yellow. Outer calyx leaves about eight, oblong, rounded at the end and fringed with setaceous teeth at the edge. Inner calyx leaves oval-lanceolate, entire, yellowish and membranous. Florets of the ray large, entire. Florets of the disc five toothed, yellow with brownish anthers, and separated by scales longer than themselves.—On the east side of Fresh pond.—September.

328. RUDBECKIA.

RUDBECKIA LACINIATA. *Willd.* *Common Rudbeckia.*

Lower leaves pinnate ; divisions three lobed, the upper ones ovate ; stem smooth ; down crenate.

A tall plant, resembling the sunflower. Stem erect, round, glabrous, six or eight feet high, branching. Leaves rough, the lower ones petioled, pinnate or pinnatifid with about five lanceolate, cut or toothed segments ; upper ones nearly sessile, ovate or three cleft. Calyx mostly simple of about eight ovate, acute segments. Florets of the ray large, yellow, lanceolate, drooping. Disc conical, its florets greenish yellow, with their short segments erect or incurved. Receptacle large, down paleaceous, crenate.—Wet meadows on the Newburyport turnpike.—August.—Perennial.

329. CENTAUREA.

CENTAUREA NIGRA. *L.* *Knapweed.*

Scales of the calyx ovate, with an erect, capillary fringe ; lower leaves lyrate-angular, upper ones ovate.

Stem about two feet high, branching, angular. Lower leaves lyrate or irregularly toothed, upper ones entire. Flowers purple, solitary, terminal. Calyx round-ovate, the scales black, ovate, with a stiff fringe. Florets all fertile.

This plant, not long since introduced from Europe, has be-

come very abundant and troublesome in Charlestown and Medford.—July, August.—Perennial.

NESESSARIA.

330. IVA.

IVA FRUTESCENS. L.

High Water Shrub.

Leaves lanceolate, rough, with dots, deeply serrate; stem shrubby. *Willd.*

A fleshy shrub, about the borders of salt marshes. Annual shoots erect, furrowed. Branches axillary, or a little above the leaves. Leaves ovate-lanceolate, serrate, three nerved, somewhat rough, upper ones entire. Flowers in a sort of leafy racemes, small, drooping, green, without beauty.



Class XX. GYNANDRIA. Stamens situated on the pistil.

Order I. MONANDRIA. One stamen.

331. ORCHIS. Corolla five petalled, the upper petal arched; lip with a spur from its base; anther terminal, parallel and affixed to the style.

332. NEOTTIA. Corolla five petalled; the external petals joining round the base of the lip; anther parallel to the style and affixed to it behind.

333. EPIPACTIS. Corolla erect, spreading; lip without a spur, flat, pendulous, bifid at tip; anther resembling a lid, persistent.

334. MALAXIS. Corolla spreading, resupinate; lip concave, spreading, ascending; anther resembling a lid.

335. ARETHUSA. Corolla five petalled, somewhat ringent; lip without a spur; anther resembling a lid, persistent.

336. *CYMBIDIUM*. Corolla five petalled, erect or spreading; lip concave at base, without a spur; anther resembling a lid, deciduous.

337. *CORALLORHIZA*. Petals five, equal and connivent; lip mostly prolonged at base; style free; pollen masses four, oblique.

Order II. *DIANDRIA*. Two stamens.

338. *CYPRIPEDIUM*. Corolla four petalled, spreading; lip inflated, hollow; capsule three valved, one celled, many seeded.

Order III. *HEXANDRIA*. Six stamens.

339. *ARISTOLOCHIA*. Corolla monopetalous, tubular, crooked, with a swelling base and unequal border; capsule inferior, six celled.

GYNANDRIA.

MONANDRIA.

331. ORCHIS.

ORCHIS BLEPHARIGLOTTIS. Willd. *Fringed white Orchis*.

Lip lanceolate, ciliate, as long as the upper petal; spur longer than the germ.

This very delicate species resembles *O. ciliaris* in its habit, and would be difficult of distinction but for its colour. Spike rather short with snow white flowers. Germs slender, longer than the bractes, twisted, tapering upward. Outer petals roundish, concave, the upper one erect, the two lateral ones reflexed. The two inner petals much smaller, linear, fringed at the end. Lip of the nectary lanceolate, fringed at the edge. Spur longer than the germ, being nearly an inch in length.—In swamps and meadows, rare.—Cambridge &c.—Perennial.

ORCHIS CILIARIS. *L.**Fringed yellow Orchis.*

Lip oblong lanceolate, pinnately ciliate, twice as long as the petals; spur longer than the germ.

Less common here than at the south. It nearly resembles the preceding species in structure, but the lip is somewhat larger in proportion to the petals. Flowers of a bright, orange yellow.—Found at Northborough.—July.—Perennial.

ORCHIS PSYCODES. *Willd.**Ragged Orchis.*

Lip three parted, capillary, many cleft; petals obtuse; spur filiform-club shaped, as long as the germ. *Willd.*

Syn. ORCHIS LACERA. Mich.

This is our most common species. Stem two feet high, smooth. Leaves oblong, smooth, tapering to a point. Flowers numerous, of a faint yellow, in a large, terminal spike. Germs appearing like flower stalks, long and slender, arched, furrowed, and swelling in the middle. Petals five, the three outer ones ovate, the two inner ones oblong. Lip of of the nectary reflexed, divided into three narrow, wedge shaped segments, fringed at the end. Spur as long as the germ, curving, and thickened toward its extremity.—Pastures and meadows.—July.—Perennial.

ORCHIS ORBICULATA. *Pursh.**Round leaved Orchis.*

Lip linear, entire, obtuse; the three upper petals connivent, the two lateral ones spreading, oblique at base; spur longer than the germ; scape with two flat, orbicular leaves at base.

A remarkable species with two large, round leaves spreading flat upon the ground, their form sometimes varying to ovate. Scape a foot or two high, bearing a spike of greenish flowers with long, linear lips.—In Danvers. Dr. Nichols.—In Hallowell, Maine, and Conway, New-Hampshire.—July.—Perennial.

ORCHIS DILATATA. *Pursh.**Tall Orchis.*

Lip linear, entire, obtuse, dilated and rounded at base; spur as long as the lip, shorter than the germ; bractes as long as the flowers; stem leafy.

A very tall species with numerous lanceolate leaves, and green or whitish flowers without beauty.—Common on the sides of the White mountains by the margin of brooks.—July.—Perennial.

ORCHIS BRACTEATA. *Willd.* *Bracted Orchis.*

Lip linear, emarginate, obsoletely three toothed; petals subconnivent, lateral ones ovate, broader; spur obtuse, scrotiform; bractes twice as long as the flower.

Root approaching to palmate; the divisions fewer. Lower leaves somewhat obovate; upper leaves lanceolate. Bractes linear-lanceolate, twice as long as the flower. Petals green, ovate, converging, the two lateral ones longest. Lip green, linear oblong, ending in three teeth, the middle one shortest. Spur obtuse, inflated, transparent, half as long as the lip.—Woods, Vermont &c.—June.—Perennial.

ORCHIS SPECTABILIS *Willd.* *Shewy Orchis.*

Lip obovate, undivided, crenate, retuse; petals straight, the lateral ones longer; spur clavate, shorter than the germ; bractes longer than the flower; stem leafless.

A low species with large, fine flowers. Root fascicled. Leaves radical, large, oval. Stem half a foot high, very acute angled. Bractes lanceolate. Flowers few and among the largest of the genus. Petals converging, ovate-lanceolate, purple. Lip of the nectary whitish, ovate, crenate or repand, as long as the spur. Spur shorter than the germ, large, white.—Woods, Vermont and New-Hampshire.—June.

ORCHIS FIMBRIATA. *Ait.* *Fimbriated Orchis.*

Lip spreading, scarcely longer than the petals, flabelliform, fimbriate, three parted, the divisions nearly equal and flat; lateral petals fimbriate-toothed, spur filiform, club-shaped, longer than the germ; leaves lanceolate.

A very beautiful plant. Stem two feet high, with several broad-lanceolate, smooth leaves, and ending in a large spike of purple flowers. Germs incurved, thickened in the middle. Pe-

tals five, spreading, the two inner ones fringed. Lip of the nectary somewhat exceeding the petals, divided into three segments, which are wedge shaped, spreading like a fan, three parted, the segments nearly equal, fringed, flat and not connivent. Upper lip entire. Spur considerably longer than the germ.—Meadows.—July.—Perennial.

I have ascertained that this is the *O. fimbriata* of Pursh by his herbarium, and also of Willdenow, *vide Muhlenbergii*.

* ORCHIS GRANDIFLORA.

Large flowering Orchis.

O. labello dependente petalis duplo longiore, tripartito, laciniis cuneiformibus, inciso-fimbriatis intermedio; maximo fimbriis conniventibus; petalis lateralibus dentato-fimbriatis; cornu adscendente, clavato, germine longiore; foliis ovato-oblongis.

Lip dependent, twice as long as the petals, three parted, the divisions wedge shaped and fimbriate, the middle one largest with connivent fimbriæ; lateral petals fimbriate; spur ascending, clavate, longer than the germ; leaves oval-oblong.

This elegant plant grows to the height of two feet and upwards. Stem thick, angular, fistulous. Lower leaves oblong-oval, obtuse; upper ones and bractes lanceolate, acuminate. Spike oval-oblong, many flowered. Petals all contiguous, pale purple, the three outer ones ovate, concave, entire; the two inner ones ovate, unguiculate, cut or fringed on the whole of their sides, but scarcely so at the ends. Lip deeper purple, more than twice the length of the petals, being sometimes nearly an inch long, divided into three segments, the two lateral ones cuneiform, cut and fringed to the middle or farther, the middle one twice as large, flabelliform, cut and fringed to the middle, but not emarginate, the fimbriæ on each side the middle converging in front of the lip. Upper lip with a notch between the two anthers.—Found at Lancaster, Leominster, Deerfield &c. Abundant in Enfield, New Hampshire.

This plant is perhaps the largest and most beautiful of all the species of Orchis. The spike sometimes consists of a few large flowers, but in favorable situations it is five or six

inches long and three in thickness. The flowers are more than twice the size of *O. fimbriata*, paler, and very different in the form of the lip, which has a very large middle segment with a part of its fringe always bent inwards. Its lower leaves also are very obtuse. It differs also from *O. incisa*, which is a small flowering species, and from *O. fissa*, with large cleft flowers, of which I have specimens from the Alleghany mountains.

332. NEOTTIA.

§ Subgenus SPIRANTHES. *Spike twisted, pollen granular.*

* NEOTTIA GRACILIS.

Slender Neottia.

N. foliis radicalibus ovatis; scapo vaginato, floribus spiraliter secundis; labello obovato, crispo.

Leaves radical, ovate; scape sheathing; flowers in a spiral row; lip obovate, curled.

Root fascicled. Leaves radical, on short petioles, ovate, acute, nerved, caducous. Scape erect, slender, eight to twelve inches high with a few sheathing scales or leaflets. Flowers white in a twisted spike. Bractes closely applied to the germ, ovate, acuminate. Germs obovate. Petals linear, crystalline, parallel, the three upper ones cohering. Lip obovate-spatulate, curled, its base swelling with the lateral petals connected before it. Anther parallel to the style.—In dry, hilly woods.—July.—Perennial.

The leaves falling off frequently cause the plant to appear leafless at the time of flowering.

Variety β. secunda. Spike unilateral, hardly twisted; flowers more slender. Perhaps a different species.—In Conway, New-Hampshire.—July.

NEOTTIA CERNUA. *Willd. Drooping Neottia. Ladies' Traces.*

Leaves lanceolate, three nerved; stem sheathed; flowers recurved-drooping; lip oblong, entire, acute. *Willd.*

Syn. OPHRYS CERNUA. L.

This plant is also distinguished, like several others of its genus, by the spiral arrangement of its flowers. Lower leaves very long, linear-lanceolate, nerved. Stem round, somewhat fleshy,

invested with short, alternate, leafy sheaths; pubescent at top. Spike dense, oblong. Flowers curving downward, of a dull white colour. Germs ovate. Petals pubescent. Lip of the nectary minutely crenulate, somewhat acute.—In moist ground.—August, September.—Perennial.

§ § *Subgenus* GOODYERA. *Lip gibbous, undivided above; pollen angular, (Brown,) sectile. (Reichard.)*

NEOTTIA PUBESCENS. *Willd. Veined Neottia. Rattlesnake Plantain.*

Radical leaves ovate, petioled, reticulated; scape sheathed, scape and flowers pubescent; lip ovate, acuminate; petals ovate. *Willd.*

Syn. SATYRIUM REPENS. Mich.

GOODYERA PUBESCENS. *Nutt.*

A singular plant, remarkable for its dark leaves, reticulated on their upper surface with white veins. They proceed from the root or base of the scape on short petioles, are ovate, acute, entire, and generally endure the winter. Stem or scape erect, invested with a number of acute sheaths, distinctly pubescent. Spike oblong, downy. Flowers white, from all sides of the stem. Petals five, the three uppermost agglutinated, the two lateral ones spreading, concave, acuminate. Nectary swelling, inflated, with its point extended.—Woods.—July, August.—Perennial.

NEOTTIA REPENS. *Willd.*

Creeping Neottia.

Radical leaves ovate, petioled, reticulated; scape sheathed; scape and flowers pubescent; flowers unilateral; lip and petals lanceolate.

Syn. SATYRIUM REPENS. L.

GOODYERA REPENS. *Brown.*

A smaller plant than the preceding, and less distinctly reticulated.—Low woods.—July.—Perennial.

333. EPIPACTIS.

EPIPACTIS CONVALLARIOIDES. *Willd. Heart leaved Epipactis.*

Stem two leaved; leaves opposite, heart shaped,

roundish, acute ; spike few flowered ; lip oblong, obtusely two lobed ; germ roundish ; root fibrous.

Syn. *OPHRYS CORDATA. Mx.?*

LISTERA CONVALLARIOIDES. Nutt.

Root fibrous. Stem erect, furrowed, furnished half way with two opposite, sessile, broad-heart shaped leaves. Flowers in a short spike, the three outer petals green, the two inner ones purplish. Lip bifid, with two appendices at base.—In woods and near mountain brooks remote from the sea coast, particularly on the sides of the White mountains ; three or four inches high.—July.—Perennial.

334. MALAXIS.

MALAXIS UNIFOLIA. Mx.

One leaved Malaxis.

Leaf solitary, ovate, clasping ; scape five angled ; lip cleft at the tip.

Syn. MALAXIS OPHIOGLOSSOIDES. Willd.

A small plant with a single clasping leaf. Flowers in a terminal raceme with short, ovate, acuminate bractes. Peduncles about half an inch long, many of them abortive. Germ obovate, furrowed. Petals five, the two upper ones half heart shaped, the two inner ones filiform, the lowest deflexed and revolute at the edges. Lip erect, heart shaped, cleft at top with a tooth in its division. Column or style minute, extended in front of the lip.—Woods, rare.—June.—Perennial.

MALAXIS LILIFOLIA. Willd.

Two leaved Malaxis.

Leaves two, ovate-lanceolate ; scape triangular ; inner petals filiform, reflexed ; lip concave, obovate, acute at tip

Leaves oval or lanceolate, radical. Scape about six inches high. Flowers in a short raceme ; the three outer petals white, linear, acute ; the two inner ones capillary, yellowish, reflexed. Lip wedge shaped or obovate, mucronate, larger than the petals.—Woods, Cambridge.—Perennial.

335. ARETHUSA.

§ *Subgenus ARETHUSA. Lip and petals adnate to the style ; pollen angular.*

*ARETHUSA BULBOSA. L.**Bulbous Arethusa.*

Root globular ; scape sheathed ; spathe two leaved.
L.

The root of this beautiful plant is a tuber or solid bulb, with the stem ascending from one side. In small plants the stem appears perfectly leafless, and only invested with a few alternate sheaths. In large plants the upper sheath expands into a short lanceolate leaf. This leaf is always found when the plant is in fruit. Stem erect, smooth, bearing one flower, rarely two, invested at base with a minute, two leaved spathe. Germ furrowed. Petals five, of a bright, crystalline purple, cucullate or curved forward, three exterior and two interior, all successively adnate to the style above the germ. Style wedge shaped, incurved, supporting the anther near its end. Lip spreading, deflexed, curled and crenate, bearded in the middle, variegated with purple, yellow and white. Capsule oblong-lanceolate, six ribbed, six valved.—Wet meadows, Brookline, West Cambridge.—May, June.

§ § *Subgenus POGONIA. Lip sessile ; petals distinct ; pollen farinaceous.*

ARETHUSA OPHIOGLOSSOIDES. L. Adders' Tongue Arethusa.

Root fibrous ; scape furnished with an oval leaf, and a lanceolate spathe-like leafet. *L.*

Syn POGONIA OPHIOGLOSSOIDES. Brown.

The root has no appearance of a bulb. Stem erect, with two remote leaves, one about midway of the stem, oval and sheathing at base ; the other near the flower, ovate-lanceolate, much smaller. Flower pale purple, nodding, its petals spreading more than in the last species. Lip of the nectary spreading, fringed at the edge. Pistil bearing the anther near its end, and shorter than in the foregoing.—Meadows.—June.

*ARETHUSA VERTICILLATA. L.**Whorled Arethusa.*

Leaves five, oblong-lanceolate, whorled ; flower single ; the three outer petals very long and linear, the inner ones lanceolate, obtuse ; lip three lobed ; the middle lobe undulated.

Syn. POGONIA VERTICILLATA. Brown.

From six to twelve inches high, with a single whorl of smooth, oval-lanceolate leaves at the top of the stem. Above this is a single flower, the three outer petals of a greenish brown, linear, and about two inches long; inner petals short, oblong, obtuse. Lip spreading, crested in the middle, undulated, at the end.—At Medfield, and at Brooklyn, Connecticut.—July.—Perennial.

336. CYMBIDIUM.

CYMBIDIUM PULCHELLUM. *Sw.* *Tuberous Cymbidium.*

Leaves radical, ensiform, nerved; scape few flowered; lip erect, narrowed at base, with an expanded border, and a concave hairy disc. *Sw.*

Syn. LIMODORUM TUBEROSUM. L.

This fine plant is found in meadows at Cambridge, and elsewhere, flowering in July. Root bulbous. Stem one or two feet high, sheathed at base. The plant has only one, long, grass like sheathing leaf. The spike contains several alternate, purple flowers. Petals five, spreading. Lip of the nectary erect, increasing in width upward, and furnished toward the top inside with yellow, glandular hairs. Style opposite to this, concave, dilated, supporting a terminal anther.—Perennial.

337. CORALLORHIZA.

CORALLORHIZA ODONTORHIZA. *Nutt.* *Dragon's Claw.*

Lip entire, ovate, obtuse, crenulate; spur obsolete, adnate to the germ; stem leafless.

Syn. CYMBIDIUM ODONTORHIZON. Willd.

A singular, erect, leafless, fleshy plant of the woods. Stem fleshy, particularly at the root, smooth, somewhat furrowed, leafless, with several close sheaths. Spike many flowered. Germs inversely ovate, compressed, striated. Petals five, of a brownish green, erect or spreading. Lip of the nectary as long as the petals, ovate, declined, a little curled at the edge, white with irregular, purple spots.—In dark, moist woods.—July, August.—Perennial.

DIANDRIA.

338. CYPRIPIEDUM.

CYPRIPIEDUM ACAULE. *Ait.**Ladies' Slipper.*

Scape leafless, one flowered ; root leaves two, oblong, obtuse ; lobe of the style round-rhomboidal, acuminate, deflexed ; petals lanceolate ; lip longer than the petals, cleft before. *Willd. sub. syn.*

Syn. CYPRIPIEDUM HUMILE. Sw. Salisb. Willd.

This singular genus are readily known by their large, inflated nectary. The present species differs from the rest in having no stem leaves. The leaves are two, springing from the root, large, oval-lanceolate, plaited, downy. Flower commonly single, terminal, nodding. Spathe lanceolate. Petals four, spreading, green with a tinge of purple, the upper and under ones lance-ovate, the two lateral ones narrower, longer, hairy inside, slightly waved and twisted. Nectary a large, purple, inflated bag, veined, villous, and longer than the petals. Style over the base of the nectary, supporting two lateral anthers on the inside, and ending in a broad, roundish, deflexed, acute lobe, carinated on the inside. Capsule oblong, acute, its sides unequally curved, crowned with the style, opening at the three principal angles by a double fissure, between which the suture or frame work is included.—Woods.—May, June.—Perennial.

CYPRIPIEDUM PARVIFLORUM. *Willd. Yellow Ladies' Slipper.*

Stem leafy ; lobe of the style triangular, acute ; exterior petals ovate-oblong, acuminate ; inner petals linear, twisted ; lip shorter than the petals, compressed.

Syn. CYPRIPIEDUM CALCEOLUS. Mx.

Stem erect, downy. Leaves alternate, clasping, oval, nerved, downy. Upper and lower petal ovate-lanceolate, acuminate, green, striped and spotted with dark purple ; lateral petals linear, twisted, striped and spotted, hairy inside at base. Nectary oblong-oval, yellow, dotted inside, its aperture roundish with an inflexed margin. Lobe of the style triangular or deltoid, depressed in the middle with a double keel underneath, yellow. Stigma rounded. Filaments growing to the

sides of the style, projecting over the anthers.—Woods, Vermont, New-Hampshire &c.—On the borders of a remarkable marl pond in Barnard, Vermont.—June.—Perennial.

CYPRIPEDIUM SPECTABILE. *Willd.* *Tall Ladies' Slipper.*

Stem leafy ; lobe of the style elliptic-heart shaped ; outer petals broad-ovate, obtuse ; lip longer than the petals, cleft before.

Syn. CYPRIPEDIUM CANADENSE. *Mx.*

A stout plant about two feet high, the stem and leaves hairy. Leaves oval lanceolate, plaited, exactly resembling those of *Veratrum viride*. Flowers two or three, large, the lip much inflated and variegated with stripes of purple and white.—In Augusta, Maine ; Woodstock, Vermont.—July.—Perennial.

§ *Subgenus* ————. *Petals five, lip of the nectary acute.*

CYPRIPEDIUM ARIETINUM. *Ait.* *Ram's Head.*

Stem leafy ; lobe of the style orbicular ; petals five, the two lower ones linear lanceolate, deflexed, the two lateral ones linear, spreading, the upper one oblong-ovate, acute ; lip as long as the petals, inversely conical.

Stem six or eight inches high with a few alternate, lanceolate leaves. Flower much smaller than in any of the foregoing species. Petals greenish brown, the upper one much broadest, Lip small, inflated, acute, reticulated with red and white. It has been compared in shape to a sheep's head, the lateral petals representing the horns.—In Hallowell, Maine.—May.

HEXANDRIA.

339. ARISTOLOCHIA.

ARISTOLOCHIA SERPENTARIA. *Virginia Snake Root.*

Bigelow, Medical Botany, Pl. xlix.

Leaves heart shaped, oblong, acuminate ; stem flexuous ; peduncles radical.

The root is extremely fibrous, and sends up a number of stems ; simple or slightly branched, less than a foot in height, jointed,

flexuous, and often of a reddish tinge. Leaves alternate, on short petioles, oblong, entire, acuminate, heart-shaped at base and three nerved. The flowers grow close to the ground; they have a stiff, leathery texture, and a dull brownish purple colour. The peduncle has one or more leaflets, and gradually enlarges into a furrowed, obovate germ. The corolla consists of a long, contorted tube, bent in the form of the letter S. swelling at its two extremities, having its throat surrounded by an elevated edge or brim, and its border expanded into a broad, irregular margin, forming an upper and under lip, which are closed in a triangular manner in the bud. Anthers twelve, growing in pairs to the sides of the fleshy style, which is situated at the bottom of the corolla, and covered by a firm, spreading, convoluted stigma, which extends over the anthers. Capsule obovate, six angled, six celled, with numerous, flat, small seeds.—Woods near New-Haven.—June.—Perennial.



Class XXI. MONŒCIA. Stamiferous and pistiliferous, or barren and fertile flowers on the same plant.

Order I. MONANDRIA. One stamen.

390. CHARA. Barren flowers, calyx none, corolla none; fertile flowers, calyx four leaved, corolla none; stigma three cleft; berry many seeded.

391. ZOSTERA. Spadix linear, bearing the fructification on one side; calyx none; corolla none; anther sessile, parallel to the germ; stigmas two; capsules one seeded.

Order II. DIANDRIA. Two stamens.

392. LEMNA. Calyx one leafed; corolla none; style one; capsule many seeded.

Order III. *TRIANDRIA*. Three stamens.

393. *ERIOCAULON*. General calyx an imbricate head; corollas three petalled; seed one, crowned with the corolla.

394. *CAREX*. Spike imbricate; calyx glume one valved; corolla none; stigmas two or three; seeds covered with a swelling tunic.

395. *SPARGANIUM*. Ament roundish; calyx three leaved; corolla none; stigma cloven; drupe dry, one seeded.

396. *TYPHA*. Ament of barren flowers cylindrical, hairy; anthers about three on each filament. Ament of fertile flowers cylindrical; seed one, on a feathery pedicel.

397. *COMPTONIA*. Aments imbricated; in the barren flowers, calyx two leaved; corolla none; anther two parted. In the fertile flowers, calyx six leaved; corolla none; styles two; nut ovate.

Order IV. *TETRANDRIA*. Four stamens.

398. *URTICA*. Barren flowers, calyx four leaved; corolla none; nectary central, cup shaped. Fertile flowers, calyx two leaved; corolla none; seed one, superior, shining.

399. *BÆHMERIA*. Barren flowers, calyx four parted; corolla none. Fertile flowers, calyx of crowded scales with no corolla, and a germ between each scale; style one; seed one, compressed.

400. *ALNUS*. Barren flowers, ament composed of wedge shaped, three flowered receptacles; corolla four parted. Fertile flowers, scales of the ament two flowered; corolla none; styles two; seed compressed, ovate.

Order V. PENTANDRIA. Five stamens.

401. XANTHIUM. Barren flowers, calyx common, imbricate; florets funnel form, five cleft; receptacle chaffy. Fertile flowers, calyx two leaved, two flowered; corolla none; drupe dry, prickly, cloven; nucleus two celled.

402. AMBROSIA. Barren flowers, calyx common, one leaved; florets funnel form, three or five cleft; receptacle naked. Fertile flowers, calyx one leaved, one flowered; corolla none; nut toothed, one seeded.

403. AMARANTHUS. Barren flowers, calyx three leaved; corolla none; stamens three or five. Fertile flowers, calyx three leaved; corolla none; styles three; capsules one celled, opening transversely; seed one.

Order VI. HEXANDRIA. Six stamens.

404. ZIZANIA. Barren flowers, calyx none; corolla glume two valved, awnless. Fertile flowers, calyx none; corolla glume two valved, hooded, awned; style two parted; seed one, invested with the corolla.

Order VIII. POLYANDRIA. Eight or more stamens.

405. SAGITTARIA. Calyx three leaved; corolla three petalled. Barren flowers with about twenty four stamens. Fertile ones with numerous pistils; capsules many, swelling, one seeded.

406. MYRIOPHYLLUM. Calyx four leaved, corolla four petalled. Barren flowers with eight stamens. Fertile ones with four stigmas; seeds four, coated.

407. ARUM. Spathe one leaved; spadix cylindrical, naked at top, with stamens in the middle and germs at the base; berries one celled.

408. *CALLA*. Spathe ovate; spadix covered with flowers; corolla none; berry many seeded.

409. *FAGUS*. Barren flowers, calyx campanulate, five or six cleft; corolla none; stamens from eight to twelve. Fertile flowers, calyx from four to six toothed, hairy; corolla none; germs two; nuts two, contained in the coriaceous, four cleft, prickly calyx.

410. *CASTANEA*. Barren flowers, ament naked; calyx none; corolla five or six petalled; stamens from five to twenty. Fertile flowers, calyx five or six leaved, muricated; corolla none; germs three; styles six; stigma pencil form; nuts three, contained in the prickly calyx.

411. *QUERCUS*. Barren flowers, ament naked; calyx four or five cleft; corolla none; stamens from four to ten. Fertile flowers, calyx commonly six toothed; corolla none; styles from one to five; nut coriaceous, surrounded at base by the persistent calyx.

412. *JUGLANS*. Barren flowers, ament imbricate; calyx scale form; corolla six parted; filaments about eighteen. Fertile flowers, calyx four cleft, superior; corolla four parted; styles two; drupe coriaceous, with a grooved nut.

413. *BETULA*. Barren flowers, ament imbricate, scales peltate, three flowered; calyx a scale; corolla none; stamens from ten to twelve. Fertile flowers, ament imbricate; calyx scale two flowered; corolla none; seed one, winged.

414. *CORYLUS*. Barren flowers, calyx a scale of the ament, three cleft; corolla none; stamens eight. Fertile flowers, calyx two cleft, lacerated; styles two; nut ovate, smooth, surrounded with the persistent calyx.

415. *CARPINUS*. Barren flowers, calyx the scale of an ament, roundish; corolla none; stamens from eight to twenty. Fertile flowers, calyx the scale of an ament, oblong; germs two with two styles on each; not angular one celled.

416. *OSTRYA*. Barren flowers, ament imbricate; calyx a scale; corolla none; filaments branched. Fertile flowers, ament naked; calyx none; corolla none; capsules inflated, imbricated, one seeded at base.

417. *PLATANUS*. Aments globular. Barren flowers, corolla hardly visible; anthers growing round the filament. Fertile flowers, corolla many parted; stigma recurved; seeds roundish, with a capillary down at the base.

Order IX. MONADELPHIA. Stamens united.

418. *PINUS*. Barren flowers, calyx four leaved, corolla none; stamens many. Fertile flowers, ament a cone; calyx scale two flowered; corolla none; pistils two; nuts two, winged.

419. *CUPRESSUS*. Barren flowers, ament imbricate; calyx a scale; corolla none; anthers four, without filaments. Fertile flowers, ament a cone; calyx scale one flowered; corolla none; stigmas two; nut angular.

420. *THUYA*. Barren flowers, calyx the scale of an ament; corolla none; stamens four. Fertile flowers, calyx a two flowered scale of a cone; corolla none; pistils two; nut one, winged.

421. *ACALYPHA*. Barren flowers, calyx three or four leaved; corolla none; stamens about twelve. Fertile flowers, calyx three leaved; corolla none; capsules three grained, three celled; seeds solitary.

MONÆCIA.

MONANDRIA.

390. CHARA.

CHARA VULGARIS.

Common Chara.

Stems and branches naked at base ; branchlets round with leafy joints ; leaves oblong-subulate ; bractes shorter than the fruit.

An immersed plant growing at the bottom of muddy ponds and ditches, with a fœtid smell. Stems numerous, a foot long, slender, brittle. Leaves about eight in a whorl, subulate, acute. Anther sessile. Germ surrounded with four leaves, and followed by a many seeded berry.—July.

391. ZOSTERA.

ZOSTERA MARINA ? L.

*Eel Grass. Sea Wrack.*Pericarps sessile. *Sm.*

The plant, usually denominated *Eel grass* in this section of the country, and continually thrown ashore in large quantities by the sea, is probably the *Zostera* of Europe. The leaves are very long, linear, obtuse, and when carefully broken, discover a multitude of fine internal filaments. The fructification said to grow on a spadix at the base of the leaves, I have never been able to discover.

DIANDRIA.

392. LEMNA.

LEMNA MINOR. L.

Duck Meat.

Leaves sessile, nearly flat on both sides ; root solitary. *L.*

This minute plant, resembling a small floating scale, multiplies extensively in stagnant ponds and ditches, frequently giving a green appearance to their whole surface. The leaves, which constitute most of the plant, cohere two or three together, are small, ovate, entire, smooth, and slightly convex under-

neath. Root long, solitary, undivided, terminating in a small sheath. Flowers minute, proceeding from a marginal fissure.

TRIANDRIA.

293. ERIOCAULON.

ERIOCAULON PELLUCIDUM. Mich. *Transparent Pipewort.*

Glabrous; leaves subulate, channelled, pellucid, five nerved; stem solitary; head somewhat apple-shaped; involucre hardly distinct, with obtuse scales. Mich. abr.

Syn. *ERIOCAULON SEPTANGULARE?* Sm.

Found in ponds, growing under water, a part of the stem only projecting above the surface, and supporting a small, flat head of obscure flowers. The whole plant appears made up of a mass of cells, whose reticulated appearance is very obvious, particularly in the root. The leaves grow in a tuft at the bottom. They are one or two inches long, narrow, tapering to a point, transparent at base, like the root. Stem erect, furnished with a sheath at base, simple, with six and sometimes seven angles, terminating in a small, hemispherical head of close flowers.—August.

394. CAREX.

§ *Subgenus* —————. *Stigmas two.*

CAREX CEPHALOPHORA. Willd. *Headed Sedge Grass.*

Spikes androgynous, aggregate in an elliptic head; fruit ovate, compressed, bifid, margined, ciliate-serrate above.

A slender sedge with a single spike or head, barren at top.—Found in woods.—June.—Perennial.

CAREX STIPATA. Willd. *Close spiked Sedge.*

Spikes androgynous, about five, oblong, aggregate; fruit spreading, ovate, acuminate, two pointed, flat and convex, nerved; culm triangular, rough.

A stout, but not very tall species, common in wet meadows, forming tufts. Spikelets five or six, barren above, crowded into an irregular, interrupted spike.—May, June.—Perennial.

CAREX SPARGANIOIDES.

Burr Reed Sedge.

Spikes androgynous, many flowered, about eight, ovate, rather approximated; fruit ovate, compressed, margined, bifid, ciliate-serrate at the edge, horizontal.

A tall sedge with a long interrupted spike.—Ditches and wet grounds.—May, June.—Perennial.

CAREX SCOPARIA.

Brown Sedge.

Spikes androgynous, about five, alternate, elliptical, obtuse, subapproximate; fruit ovate-lanceolate, margined, two pointed; bractes oblong, mucronate.

Rather below the middle size, with a few small, sessile, oval spikes or heads near together.—In moist and sometimes dry ground.—June.—Perennial.

CAREX CURTA.

Loose Sedge.

Spikes androgynous, about six, alternate, cylindrical; fruit ovate, flat and convex, rather acute, entire at the mouth, longer than the ovate, acute scale.

Forms tufts in wet meadows.—June.—Perennial.

CAREX CÆSPITOSA.

Turfy Sedge.

Barren spike one; fertile spikes about three, cylindrical, obtuse, distant, the lower one with a short exerted peduncle; fruit ovate, obtuse, longer than the oblong, obtuse scale.

Slender, with dense, hard, blackish spikes. Forms tufts in boggy meadows.—Common.—May.—Perennial.

CAREX CRINITA.

Chaffy Sedge.

Barren spikes two; fertile spikes four, distant, pedunculated, pendulous, cylindrical; fruit roundish-elliptical, ventricose, short-beaked, entire at the mouth, shorter than the oblong awned scale.

About three feet high, distinguished by its very long, pendulous, bristly spikes.—In wet swamps and ditches.—May, June.—Perennial.

CAREX STELLULATA. *Gooden.* *Prickly Sedge.*

Spikes androgynous; about three, remote; divergent, acuminate, entire at the mouth. *Sm.*

Found in wet meadows. It has three or four roundish spikes with divergent fruit, resembling small burrs.—June.—Perennial.

§ § *Subgenus* ————. *Stigmas three.*

CAREX MARGINATA. *Early Sedge.*

Barren spike one; fertile spikes about two, approximated, roundish, subsessile; fruit globular, downy, two toothed, longer than the oblong-ovate scale; radical leaves, when old, longer than the culm.

A small species, three or four inches high, and the earliest grass which flowers in this vicinity. The fertile spikes are small and ovate or oblong when in flower, but globular in fruit.—Dry woods.—April.—Perennial.

CAREX LUPULINA. *Hop Sedge.*

Barren spike one; fertile spikes three, on included peduncles, oblong, approximate; bractes very long, foliaceous; fruit ovate, ventricose, nerved, with a long, conical, two pointed beak, many times longer than the ovate, mucronate scale.

Very noticeable in meadows and ditches for its large, oblong, nodding, turgid spikes of fruit.—June, July.—Perennial.

CAREX FOLLICULATA. *Round spiked Sedge.*

Barren spike one; fertile spike commonly one, about six flowered, with a visible footstalk; stigmas three; fruit ovate, inflated, nerved, its beak with a two parted mouth; scale ovate, shorter than the fruit.

Rather smaller than the last, with commonly a single, short, subsessile, inflated, fruit-spike.—Swamps.—June.—Perennial.

CAREX FLAVA. *Yellow Sedge.*

Barren spike one; fertile spikes about three, subapproximate, elliptical, with included peduncles; fruit

ovate, reflexed, with a curved two-toothed beak, longer than the ovate-lanceolate scale.

A slender carex of the middle size, with short, oval, yellowish fruit-spikes.—Moist ground.—June.—Perennial.

CAREX PLANTAGINEA.

Broad leaved Sedge.

Barren spike one; fertile spikes four, distant; fruit elliptical, three cornered, pedicelled, smooth, shorter than the ovate, pointed scale; root-leaves lanceolate, nerved.

A low species with very broad, lanceolate, spreading leaves.—Woods, May.—Perennial.

CAREX ANCEPS.

Sharp edged Sedge.

Barren spike one; fertile spikes three, remote, the lower ones pedunculated; fruit ovate, nerved, membranous at the mouth, longer than the oblong, mucronate scale.

Below the middle size. Angles of the culm extended and almost winged. Leaves linear-lanceolate.—Low grounds.—May, June.—Perennial.

CAREX FLEXUOSA.

Slender Sedge.

Barren spike one; fertile spikes about four, remote, filiform on drooping stalks; fruit distant, alternate, oblong, beaked, bifid, twice as long as the ovate, mucronate scale.

Syn. CAREX DEBILIS. Mx.

CAREX TENUIS. Rudge.

A very slender carex with flaccid spikes.—Found in wet meadows &c.—June.—Perennial.

CAREX PSEUDO-CYPERUS.

Large spiked Sedge.

Barren spike one; fertile spikes four, geminate, pedunculated, pendulous, cylindrical; fruit ovate-lanceolate, two pointed, reflexed, equal to the setaceous scale.

Very large with long, stout, cylindrical, pendulous spikes, ex-

ceeding in size those of any species here mentioned.—Ditches and ponds.—June, July.—Perennial.

CAREX LACUSTRIS.

Lake Sedge.

Barren spikes four ; fertile spikes two, erect, cylindrical, pedunculated ; fruit oblong, many nerved, beaked, forked, longer than the oblong, mucronate scale.

A very stout carex, three feet high, with commonly four barren spikes at top. Ditches and brooks, Roxbury.—May, June.—Perennial.

395. SPARGANIUM.

SPARGANIUM RAMOSUM. *Sm.*

Burr Reed.

Leaves triangular at the base, their sides concave ; common flower stalk branched ; stigma linear. *Sm.*

Readily distinguished from other Reeds and Flags, by the round burrs or heads of flowers on its branches. The radical leaves are three sided at base, erect, at length becoming sword shaped, with rather obtuse points. Stem leaves concave and sheathing. The stem is erect, round, and smooth, with several branches. Heads of flowers alternate, sessile ; the lowermost fertile, the uppermost barren, smaller, and more numerous.—In ditches at Cambridgeport, and elsewhere.—July.—Perennial.

SPARGANIUM ANGUSTIFOLIUM. *Mx.?* *Narrow Sparganium.*

Leaves flat, narrow-linear, longer than the stem.

Specimens are found in this vicinity, which answer generally to Michaux's description, but not having seen them in deep water, I am unable to say whether the leaves are ever floating.

396. TYPHA.

TYPHA LATIFOLIA. *L.*

Water Flag. Reed Mace.

Leaves somewhat ensiform ; barren and fertile spikes approximated. *L.*

The *Typha latifolia* is an inhabitant of a great variety of climates and countries. It is common in deep waters, about the margin of rivers and ponds. Leaves erect, linear-sword shaped and very long. Stem five or six feet high, round, straight, and smooth. The fertile flowers form a large, very compact, cylin-

dical spike or ament, over and adjoining which is a spike of barren flowers. The leaves of this plant are much used in the manufacture of chairs.—July.—Perennial.

TYPHA ANGUSTIFOLIA. L.

Narrow Flag.

Leaves linear, channelled; barren and fertile spikes remote, both cylindrical.

In similar situations with the last. Leaves smaller. Barren and fertile spikes at different heights on the stem, separated by a short interval.—July.—Perennial.

397. *COMPTONIA.*

COMPTONIA ASPLENIFOLIA. Ait.

Sweet Fern.

Syn. LIQUIDAMBAR ASPLENIFOLIUM. L.

This handsome shrub possesses a peculiar, and somewhat spicy scent. It is pretty common on hills and in dry woods, attaining to the height of about two or three feet, the branches covered with a brownish red bark, which is hairy or downy in the young shoots. The leaves are numerous, alternate, inserted by short petioles, somewhat hairy, linear-lanceolate, having their sides cut almost to the middle rib into numerous, roundish lobes marked by parallel veins. The middle vein is prominent beneath and hairy. At the base of each leaf is a pair of half heart-shaped, acuminate stipules, and frequently an additional pair of ovate ones below them. The barren flowers form erect, cylindrical aments, which bend over as they decay. They appear in May, and occupy the extremities of the branches. Each ament is composed of brownish, hairy, concave, reniform, acuminate scales, closely imbricating each other. Each scale contains six or eight oblong, crowded anthers, supported on the inside by a minute calyx of two oblong, scarious leaflets, which frequently remain on the rachis when the scale is detached, and thus escape observation. The fertile flowers are situated lower upon the branches, forming a crowded and almost globular ament, resembling a small burr. Each scale of this ament contains a calyx of about six linear leaves which extend far beyond the scales so as generally to conceal them. The calyx contains an oval germ surmounted by two capillary, diverging styles. The fruit is a small, ovate, chesnut coloured, one celled nut. The leaves and fruit have a strong and somewhat fragrant scent.

TETRANDRIA.

398. URTICA.

URTICA DIOICA. *L.* *Large stinging Nettle.*

Leaves opposite, heart-shaped; clusters much branched, in pairs, mostly dioecious. *Sm.*

The sensible qualities of this plant are so convincing, that a botanical description would hardly be necessary to identify it did not some others of the genus possess similar properties. Its power of stinging resides in its minute, tubular hairs or prickles, which transmit a poisonous fluid. It grows commonly in bunches about the road sides. Stem erect, obtusely quadrangular, Leaves opposite, heart-shaped, toothed. Racemes axillary, in pairs, spreading, branched. Flowers small, obscure, green.—July, August.—Perennial.

The plant varies in the length and base of its leaves.

URTICA CANADENSIS. *L.* *Canada Nettle.*

Leaves alternate, heart-ovate, acuminate, serrate, hispid on both sides; panicles axillary, mostly geminate, with divaricate branches, the lower ones barren, longer than the petioles, upper ones fertile, elongated; stem hispid and stinging.

Five or six feet high with large leaves.—On the banks of Connecticut river, in Orford, New Hampshire.—This appears to be the plant formerly proposed by Mr. Whitlow as a substitute for hemp.

URTICA PUMILA. *L.* *Richweed.*

Leaves opposite, ovate, acuminate, three nerved, serrate; lower petioles as long as the leaf; flowers monœcious, triandrous, in corymbed heads, shorter than the petioles. *Willd.*

A weed about houses, distinguished by its stem, which is fleshy and almost transparent. Leaves smooth and shining, regularly toothed or serrate, very distinctly three nerved, with long petioles. Flowers in short axillary racemes or heads, repeatedly forked and recurved.—August, September.—Annual.

399. BŒHMERIA.

BŒHMERIA CYLINDRICA. *Willd.* *Common Bœhmeria.*

Leaves opposite, ovate-oblong, acuminate, dentate, glabrous; flowers diœcious; barren spikes interrupted, fertile ones cylindrical; stem herbaceous. *Willd.*

Syn. URTICA CYLINDRICA. *L.*

Stem erect, round, channelled, hairy or subglabrous. Leaves opposite, petioled, ovate, toothed, three nerved, acuminate. Spikes axillary, simple, of many whorls, leafy at top. The barren flowers, while young, appear like white buds or seeds, and consist of a four leaved calyx and four elastic stamens. Fertile flowers more numerous, with ovate germs and pubescent styles.—Edges of swamps, on the Concord turnpike.—July.—Perennial.

400. ALNUS.

ALNUS SERRULATA. *Willd.* *Common Alder.*

Leaves obovate, acuminate, the veins and their axils hairy underneath; stipules elliptical, obtuse. *Willd.*

Syn. BETULA SERRULATA. *Ait.*

The Alder grows in wet grounds, and forms large thickets in swamps and about the edges of streams and ponds. Considered as a tree it ranks with those of the smallest size. Its leaves are oval or inversely ovate, serrate, acute, or slightly acuminate, furnished underneath with prominent, parallel, hairy veins. Barren aments pendulous, each scale containing about three flowers which have four petals and four stamens. Fertile ones short, rigid, forming a persistent cone.—March, April.

PENTANDRIA.

401. XANTHIUM.

XANTHIUM STRUMARIUM. *L.* *Sea Burdock.*

Stem unarmed; leaves heart-shaped, three nerved.
L.

A very rough plant, growing at the edges of beaches, &c. near the salt water. Stem erect, spotted, bristly. Leaves hard and rough like a file, heart-shaped, serrate, on long petioles.

The fruit is an oval burr, or nut of two cells, covered with stiff thorns, and ending in a pair of strong points, like horns.—August.

402. AMBROSIA.

AMBROSIA ELATIOR. *L.* *Tall Ambrosia. Roman Wormwood:*

Leaves twice pinnatifid, smoothish, petioles ciliated; racemes terminal, paniced; stem wand like. *Willd.*

A troublesome weed in cultivated grounds, hardly entitled to the character which its name might imply. Stem erect, branching, from one to three feet high. Leaves bipinnatifid, the upper ones pinnatifid, with parallel segments gradually decreasing in length toward the point. Barren flowers nodding, small, in terminal racemes. Fertile flowers lower down, sessile about the axils of the upper leaves.—August, September.—Annual.

AMBROSIA TRIFIDA. *L.* *Giant Ambrosia.*

Hairy, rough; leaves three lobed, serrate, the lobes oval-lanceolate, acuminate; fruit with six spines below the lip.

Much larger in all its parts than the preceding, and sometimes six or seven feet high.—On the banks of Connecticut river, Northampton.—August.—Annual.

403. AMARANTHUS.

AMARANTHUS HYBRIDUS. *L.* *Hybrid Amaranth.*

Racemes pentandrous, decompound, crowded, erect; leaves ovate-lanceolate. *Willd.*

This is a common weed in waste and cultivated grounds. Stem erect, furrowed, somewhat hairy. Leaves alternate, on long petioles, green, ovate, mostly entire, mucronated, the lower ones retuse at the end. The flowers are crowded, small, and obscure, forming large, green clusters, axillary and terminal, which turn to a dull red as the plant grows old.—Annual.

AMARANTHUS BLITUM. *Willd.* *Low Amaranth.*

Racemes triandrous, somewhat spiked; flowers three leaved; leaves ovate, retuse; stem spreading.

Found in the same places as the last. A smaller plant, spreading or prostrate.—July.

HEXANDRIA.

404. ZIZANIA.

ZIZANIA AQUATICA. *Ph.* *Canada Rice. Water Oats.*

Panicle pyramidal, the lower branches divaricate and barren, the upper ones spiked and fertile; pedicels clavate; flowers long awned; seed linear.

Syn. ZIZANIA CLAVULOSA. *Mx.*

This interesting plant grows in deep water at the edges of ponds and sluggish streams. It resembles, at a distance, slender shoots of Indian corn, but often grows to the height of five or six feet from the bottom. Culm jointed, as large as the little finger. Leaves broad-linear. Panicle a foot or more in length, the lower branches with spreading, barren flowers, the upper with appressed, erect, fertile ones. The seeds are blackish, smooth, narrow, cylindrical, about three quarters of an inch long, deciduous; within they are white and farinaceous.—In a brook near the Punch bowl, Brookline; in the brook which divides Cambridge from West Cambridge.—July, August.

The *Zizania* will probably at some day be an object of cultivation, since it affords a means of rendering useful large tracts of inundated ground, and stagnant water. Horses appear to be fond of it, and no plant, now employed as forage, offers a larger crop. The grain afforded by this plant has the qualities of rice, and is yielded in large quantity. It is however very deciduous, and on this account difficult to collect, since the seeds drop into the water almost as soon as they are ripe. The Indians collect them for food on the lakes, by pushing their canoes among them, and beating the rice into the boat, while the plant is standing.

POLYANDRIA.

405. SAGITTARIA.

SAGITTARIA SAGITTIFOLIA. *L.* *Arrow Head.*

Leaves sagittate, acute. *L.*

Common in meadows, by the sides of brooks and ditches, putting out its white flowers in July and August. The root is

fleshy, and has been used as food in times of scarcity. The leaves are radical, large, smooth, and entire, very distinctly arrow shaped, with an acute point and lobes. Scape somewhat triangular, bearing whorls of three flowers each, on simple foot-stalks. Petals three, roundish, very thin and deciduous, and difficult to preserve. Stamens in the upper flowers; pistils in the lower. Fruit in globular heads.—Perennial.

SAGITTARIA ACUTIFOLIA.

Leaves lanceolate-subulate, sheathing at base, convex on the back; scape few flowered; bractes dilated, acuminate.

Root fibrous, its branches white and reticulated, by numerous transverse partitions. There is generally a tuber among these. Leaves very small, linear-lanceolate, fleshy, concave. Petioles six times as long, smooth, round, sheathing at the base. Scape erect, round, simple, bearing its flowers in whorls of about three together. Flowers monœcious petioled, with membranous bractes. Calyx leaves concave, obtuse. Petals roundish, white. Anthers short, roundish. Germs numerous, ending in small depressed heads of acute seeds.—Edges of Fresh pond.—August.—Perennial.

406. MYRIOPHYLLUM.

MYRIOPHYLLUM SPICATUM. L. *Spiked Water Millfoil.*

Leaves all pinnate, capillary; spike terminal, whorled, naked. *Willd.*

This plant grows in deep ponds and rivers, where it is frequently drawn up by the lines of anglers. Stems long, smooth, floating. Leaves in whorls of four or five together, finely divided or pectinate, always under water. The flowering spikes, which are the only part that emerges, are solitary, bearing their flowers in small sessile whorls. Bractes three to each flower, ovate, acute, the middle one much largest. Calyx leaves short, acute. Petals oblong, obtuse, brownish green, caducous.—July, August.—Perennial.

* MYRIOPHYLLUM TENELLUM. *Slender Water Millfoil.*

M. erectum, aphyllum; bracteis integris, obtusis; petalis linearibus conduplicatis et revolutis.

Erect, leafless; bractes entire, obtuse; petals linear, conduplicate and revolute.

Stem simple, erect, four to twelve inches high, round, smooth, leafless. Flowers alternate, sessile, with oblong-obovate, obtuse, concave bractes, twice as long as the flower. Calyx leaves very short, acute. Petals white, oblong-linear, obtuse, three times as long as the calyx, doubled backward and afterward revolute. Stamens in the upper flowers, erect, as long as the petals; anthers oblong. Germs in the lower flowers, four, adnate; stigmas four, persistent, recurved, pubescent, becoming feathery. Capsules four, growing together.—In the edge of Fresh pond, also at Tewksbury. It is sometimes quite out of water and is then very small.—July.—Perennial.—Root creeping.

* MYRIOPHYLLUM PROCUMBENS. *Dwarf Myriophyllum.*

M. caule procumbente; foliis pinnatifidis, subsexfidis; floribus axillaribus, solitariis, sessilibus.

Stem procumbent; leaves pinnatifid, about six cleft; flowers axillary, solitary, sessile.

Stem slender, round, flexuous, rooting, branched. Leaves alternate, pinnatifid, with five or six narrow, fleshy segments; the lower ones sometimes linear. Flowers axillary, solitary, sessile. Calyx segments four, oblong, concave. Anthers four, oblong. Germs four, oblong, tapering, upward; stigmas curving outwardly.—July.

This minute plant grows upon the mud about ponds, and was first sent to me from Danvers by Dr. Nichols. A specimen which Mr. Boott received from the herbarium of Michaux, marked "*M. scabratum*," resembled this nearly, except in being somewhat larger. Mr. Nuttall's *M. limosum* is perhaps a variety.

407. ARUM.

ARUM TRIPHYLLUM. L. *Dragon Root. Indian Turnip.*Stemless ; leaves trifoliate ; leaflets oval, entire.
Mich.

Bigelow, Medical Botany, Pl. iv.

A singular and not inelegant plant, native of our swamps and wet woods. The root is round and flattened, its upper part tunicated like the onion, its lower and larger portion tuberous and fleshy, giving off numerous, long, white radicles in a circle from its upper edge. It is covered on the under side with a dark, loose, wrinkled skin. Leaves usually one or two, on long, sheathing footstalks, composed of three oval, mostly entire, acuminate leaflets, which are smooth, pater on the under side, and becoming glaucous as the plant grows older, the two lateral ones somewhat rhomboidal. Scape erect, round, green or variegated with purple, invested at base by the petioles, and by acute sheaths. This supports a large, ovate, acuminate spathe, convoluted into a tube at bottom, but flattened and bent over at the top, like a hood. Its internal colour is exceedingly various, even in plants growing together. In some it is wholly green, in others, dark purple or black. In most, it is variegated, with pale greenish stripes on a dark ground. The spadix is much shorter than the spathe, club shaped, rounded at the end, green, purple, black or variegated, suddenly contracted into a narrow neck at base, and surrounded below by the stamens or germs. In the barren plants its base is covered with conical, fleshy filaments, bearing from two to four circular anthers each. In the fertile plants it is invested with roundish, crowded germs, each tipped with a stigma. Plants which are perfectly monœcious, and which are the least common, have stamens below the germs. There are also frequently found irregular reniform substances, much larger than the anthers, of which they seem to be a disease. The upper part of the spadix withers with the spathe, while the germs grow into a large, compact bunch of shining scarlet berries.

Every part of the Arum, and especially the root, is violently acrid, and almost caustic. Applied to the tongue, or to any secreting surface, it produces an effect like Cayenne pepper, but

far more powerful, so much so, as to leave a permanent soreness of many hours' continuance. This acrimony is of a volatile nature and disappears upon boiling or drying. It consists of an inflammable substance, volatile at low temperatures, and not combining with water, or alcohol.—May.—Perennial.

408. CALLA.

CALLA PALUSTRIS. *L.**Northern Calla.*

Leaves heart shaped; spathe flat; spadix covered with perfect flowers.

A handsome aquatic plant. Root as large as the finger, jointed, creeping. Leaves on long stalks, smooth, entire, heart shaped, acuminate with an involute point. Scape smooth, a little compressed. Spathe oval, spreading, recurved, clasping at base, ending in a cylindrical or involute point; green on the outside, white within. Spadix oblong-oval, covered with flowers which present the appearance of large, crowded, greenish germs, surrounded with white stamens.

The root is acrid like that of Arum, but the pungency disappears in drying. Linnæus says the Laplanders use it for bread.

CALLA VIRGINICA. *Mich.**Virginian Calla.*

Leaves sagittate-hastate, with obtuse lobes; spathe elongated, incurved. *Mich.*

Syn. ARUM VIRGINICUM. L.

The leaves of this plant may be mistaken at sight for those of Sagittaria, from which they differ in their shorter and more obtuse lobes, and the different distribution of their nerves. They are radical, numerous, large and smooth, with semicylindrical petioles. Spathe erect, green, fleshy, cylindrical, acuminate, and waved at its edge. Spadix shorter than the spathe, tapering to a point, and covered with flowers. Anthers oblong-hexagonal, covering the upper part of the spadix. Germs below, roundish, tipped with the stigma.—Borders of ponds.—June, July.

409. FAGUS.

FAGUS FERRUGINEA. *Ait.**Beech Tree.*

Leaves ovate, acuminate, downy underneath, with large teeth, ciliate at the margin. *Willd.*

The Beech tree is known in winter by its smooth bark, its narrow, acute buds, and marcescent leaves. The leaves are ovate, fringed with fine hairs at the edge, furnished with parallel veins like those of the Chesnut, and with indentations of moderate depth at the edge. Calyx investing the fruit somewhat ovate, mucronated, with soft, short prickles. Nut triangular.

The wood of the beech is not accounted very durable, when exposed to the vicissitudes of weather.

410. CASTANEA.

CASTANEA VESCA. *Willd.**Chesnut Tree.*

Leaves oblong-lanceolate, acuminate, mucronate-serrate, naked underneath. *Willd.*

A very large and majestic tree. The bark of the trunk is coarsely divided by longitudinal fissures. Leaves half a foot long, lanceolate, smooth on both sides, with simple, prominent, parallel veins ending in large, pointed teeth at the margin, which are separated by obtuse indentations. Aments as long as the leaves, yellowish. The calyx investing the fruit forms a large, globular burr, with acute, compound, crowded spines. Nuts two or three, their upper part villous.

The American Chesnut tree is generally considered a variety of the European. Its wood is coarse grained, but light and durable. It is principally employed in fencing, for which use it furnishes one of the best materials.

411. QUERCUS.

QUERCUS ALBA. *L.**White Oak.*

Leaves somewhat equally pinnatifid, their segments oblong, obtuse, mostly entire; cup bowl-shaped, rough with tubercles; acorn ovate. *Mich. abr.*

The white oak has long been recognised among us as one of the most valuable productions of our forests. Its name is derived from the whiteness of the bark, a character by which it may be distinguished at any season of the year. The leaves are divided at their sides into a number of oblong, rounded lobes, which are perfectly obtuse or entire, not terminating in points or bristles. They are acute at base, their under side pale or glaucous,

and, when young, pubescent. The acorns are pretty large, ovate, contained in the enlarged calyx, which forms a cup of a hemispherical form, scaly and uneven on the outside.

The wood of the white oak is superior to any species in the northern states for strength and durability. Its timber is much used in ship building, in frames, in mills, in waggons, ploughs, &c. and for the staves and hoops of casks. The great consumption of it for these purposes, has rendered it comparatively scarce, so that poorer species are often substituted in the work shops of mechanics.

QUERCUS BICOLOR. Willd. *Swamp White Oak.*

Leaves oblong-ovate, downy, white underneath, largely toothed, entire at base, the teeth unequal and dilated; fruit on long peduncles. *Mich. f. sub. syn.*

Syn. QUERCUS PRINUS TOMENTOSA. Mich.

QUERCUS PRINUS DISCOLOR. Mich. f.

This species grows exclusively in swamps and low grounds. It is often brought to market as fuel, and is easily distinguished by its bark, which separates into large, flat scales or plates. The leaves are inversely ovate or wedge shaped, not sinuated, but bordered with a serpentine line, producing large, obtuse teeth. They are smooth above, but white and downy underneath. The acorns grow in pairs or single, on long stalks. They are large, oval, with a rather small, hemispherical cup.

The wood of the swamp oak is strong, heavy, and flexible, easy to split, and in point of durability approaches the white oak.

QUERCUS TINCTORIA. Bartram. *Black Oak.*

Leaves slightly lobed, the lobes angular; cup somewhat saucer-shaped, acorn depressed-globular. *Mich. sub. v. angulosa.*

The black oak grows to a large size, and is uniformly characterized by the rough, and very dark coloured outer bark of its trunk. The leaves have their sides divided into a number of large, broad, but rather short lobes, furnished with a few mucronated teeth and angles. Their base is obtuse, and their under surface, while young, is slightly pubescent, or glandular. The

cup of the fruit is thick, somewhat turbinated and not deep. Acorn short and round, with its summit depressed.

The bark of this oak furnishes the Quercitron used in dying. It is also one of the best species used in the tanning of leather. The wood is much inferior to that of the white oak, but is often used as a cheaper substitute.

QUERCUS COCCINEA. *Wang.* *Scarlet Oak.*

Leaves on long petioles, oblong, deeply sinuate, glabrous, the lobes toothed, acute; cup very scaly; acorn short, ovate. *Mich. f.*

A large species of oak. The leaves are divided into long, acute lobes, by very deep and large sinuses; the lobes ending in narrow teeth, which are mucronated with long, bristle shaped points. Both sides of the leaves are of a bright, shining green. The acorn is short and ovate, contained in a cup with prominent scales, and tapering at base. The wood of this species, as well as of the next, is more open and porous, also less durable, than that of the white oak.

QUERCUS RUBRA. *L.* *Red Oak.*

Leaves on long petioles, glabrous, obtusely sinuate; cup saucer shaped, nearly smooth; acorn nearly ovate. *Mich. f.*

The red oak is one of the largest of its genus. Its leaves are smooth and shining on both sides, divided into narrow lobes, which end in mucronated teeth, and are separated by wide and rounded sinuses. The acorns are very large, and contained in a remarkably flat, superficial cup, the scales of which are so compact as to produce a comparatively smooth surface.

The foregoing species constitute a considerable portion of the growth in the common woodlands of this vicinity. Their bark is the chief material used in tanning, and is occasionally applied in medicine to the purposes of an astringent and antiseptic. Next to walnut, their wood is esteemed the best fuel, and large quantities are consumed in town, brought from the south shore, the Middlesex canal, and the adjacent country.

QUERCUS MONTANA. *Willd.* *Rock Chesnut Oak.*

Leaves obovate, acute with large, nearly equal teeth ; cup turbinate, rough, acorn oblong.

Syn. QUERCUS PRINUS MONTICOLA. Mx.

This species has more entire leaves than the others here described, being not sinuate, but edged with large, numerous, roundish teeth. Its wood resembles that of the White oak in strength, and its bark is in much request for tanning.—On rocky hills in Hampshire county. Not observed in the immediate vicinity of Boston.

QUERCUS ILICIFOLIA. *Willd.* *Shrub Oak or Scrub Oak.*

Leaves on long petioles, with five acute lobes, entire at the margin, ash coloured on the underside ; cup somewhat top shaped ; acorn roundish. *Mich. f. sub. syn.*

Syn. QUERCUS BANISTERI. Mich. et f.

The leaves of the shrub oak are small, commonly divided into five, and sometimes three acute lobes, terminated by a bristle. They are of a pale colour underneath, and downy on the same side when young. The acorns are small, short, dark coloured and striated.

The shrub oak grows on dry hills and barren plains, and is commonly considered an indication of a sterile soil. On account of its small size, it is rarely appropriated to any important use.

412. JUGLANS.

JUGLANS CINEREA. *Butternut, Oilnut.*

Bigelow, Medical Botany, Pl. xxxii.

Leaflets numerous, oblong lanceolate, rounded at base, downy underneath, serrate. Fruit oblong-ovate with a terminal projection, viscid and hairy ; nut oblong, acuminate, with a rough, indented and ragged surface.

The leaves of the Butternut, when fully grown, are very long, consisting of fifteen or seventeen leaflets, each of which is two or three inches in length, rounded at base, acuminate, finely serrate and downy. The flowers appear in May, before the leaves

are expanded to their full size. The barren flowers hang in large aments from the sides of the last year's shoots, near their extremities. The scales which compose them are oblong and deeply cleft on each side into about three teeth or segments. The anthers are about eight or ten in number, oblong and nearly sessile. The fertile flowers grow in a short spike at the end of the new shoot. They are sessile, pubescent, and viscid. When fully grown, they seem to consist of a large oblong germ and a forked feathery style. The top of the germ presents an obscurely four toothed calyx. Within this is a corolla of four narrow lanceolate petals, growing to the sides of the style. The style divides into two large, diverging, feathery stigmas nearly as long as the germ. These flowers are somewhat later than the aments in their appearance. The fruit is sessile, several together on the sides and extremity of a long peduncle. It is of a green colour, brown when ripe, oblong-oval, pointed, hairy and extremely viscid. It contains a nut which is of a dark colour, carinated on both sides, sharp pointed, its whole surface roughened by deep indentures and sharp prominences. The kernel is more regular than in most nuts of its kind, is very oily, pleasant to the taste when fresh, but acquires a rancid taste by age.

The wood is lighter and weaker than that of the Hickories, but is said to be durable. The sap affords sugar, and an extract made from the bark is in great estimation as a laxative medicine.

§ *Subgenus CARYA.* *Aments in threes, with three parted scales, and no corolla. Pericarp four valved. Hickory.*

JUGLANS ALBA. Willd. *White Walnut. Common Hickory.*

Leaflets seven, oblong-lanceolate, acuminate, serrate, pubescent and rough underneath, the odd one sessile; fruit somewhat four angled, smooth. *Willd.*

Syn. JUGLANS TOMENTOSA. Mich. et f.

The trunk of this walnut, in young trees, is covered with a smooth bark; in old trees the bark becomes cracked, rugged, and thick, but never scaly. The buds in winter are large, hard, and of a greyish white. The leaves are pinnate, with seven or nine large leaflets, which are serrate and acuminate, nearly ses-

sile, their under side and common stalk hairy. The barren flowers are in long, pendulous, downy aments, connected three together, with a pair of acuminate bractes, connate on one side, at their junction; calyx scales three parted, the middle segment acute, the lateral ones obtuse or toothed; anthers oval brownish, from six to eight. Fertile flowers on the ends of the branches; calyx of four acute, downy leaves. The nut is hard, thick shelled, commonly with four prominent angles, the kernel tolerably good, the green shell rather thick, opening two thirds of its length in autumn, when the fruit is ripe.

JUGLANS GLABRA. *Muhl.*

Pig Nut. Hog Nut.

Leaflets seven, ovate, acuminate, serrate, glabrous on both sides, with resinous dots underneath, the odd one sessile; fruit and nut oblong or obcordate.

Syn. JUGLANS PORCINA. Mich. f.

This species of walnut has its young twigs in winter, according to the observation of Michaux, of a brown colour, and smaller by half than those of the white walnut and shagbark. The buds are also small. The leaves are pinnate, with seven, sometimes five, nearly sessile, serrate, acuminate leaflets, smooth on both sides, not hairy. Aments in threes, long, and pedulous. Nut small, thick shelled, hard, smooth; the outer, green shell thin, frequently pear shaped or tapering at base, its quarters separating half way down when the fruit is ripe.

JUGLANS SQUAMOSA. Mich. f.

Shelbark. Shagbark.

Leaflets five, on long petioles, ovate-acuminate, serrate, villous underneath, the odd one sessile; aments of barren flowers compound, glabrous, filiform; fruit globular, depressed; nut compressed. *Mich. f. abr.*

Syn. JUGLANS COMPRESSA. Gært. Willd.

The bark of this tree separates into long, flat scales or plates, with loose, detached ends, giving its trunk a rugged appearance at a distance. Michaux observes that the buds are distinguished by the shortness of the two outer scales, which extend but half their length. The leaves are pinnate; leaflets five or seven, large, oblong, acuminate, pubescent and soft underneath. The

fruit is large, roundish, depressed at top, the green shell exceedingly thick, and separating completely into quarters. The nut, which constitutes but a small part of the whole fruit, is white, angular, flattened, thin shelled, its kernel greatly superior to either of the preceding, and in considerable request.

The wood of the three foregoing species of walnut possesses similar properties. It is hard, compact, heavy, and of very great strength. At the same time it is liable to warp and decay, especially if exposed to the weather. It is principally used for purposes where strength is required, as in hoops, bows, the handles of tools, &c. It furnishes one of the best kinds of fuel known, and commands a higher price in our markets than any other species of wood.

413. BETULA.

BETULA PAPYRACEA. *Mr. f.*

Canoe Birch.

Leaves oval, acuminate, subequally serrate; petioles glabrous; veins hairy beneath. *Mr. f.*

This tree, which is called also *Large white birch* and *Paper birch*, affords a great portion of the *eastern wood* consumed as fuel in this city. It is abundant in the northern and eastern parts of New England. Leaves ovate, much less acuminate than those of the following species. Fertile aments nodding. The trunk is covered with a tough, white cuticle of many layers, from which the Indians manufacture their canoes. The wood is hard, close grained, and used in furniture.

BETULA POPULIFOLIA. *Ait.*

Common White Birch.

Leaves extensively acuminate, unequally serrate, glabrous. *Mich. f.*

The name of white birch is indiscriminately applied to this species, and to *Betula papyracea*. The present species is common here in swamps, and multiplies very fast in moist lands that are not properly cleared. Like the paper birch, its trunk is covered with a white, smooth, outer bark, separable into thin layers, and very inflammable. Its young twigs are flexible, of a dark brown, spotted with white. The leaves are heart-shaped, tapering to a long point, glutinous, smooth on both sides. The flowers, both barren and fertile, are in long, pendulous aments.

The wood is white, soft, and very perishable, decaying sooner than the bark.

BETULA NANA. L.

Dwarf Birch.

Low, smooth; leaves orbicular, crenate, reticulated underneath; scales of the ament deeply three parted, seeds orbicular, nearly wingless.

A very small, alpine species, found on the summit of the White mountains.

BETULA LENTA. L.

Black Birch. Mahogany Birch.

Leaves heart-ovate, acutely serrate, acuminate, glabrous. *Mich. f.*

Syn. BETULA CARPINIFOLIA. Mich.

This fine tree, sometimes also denominated Sweet birch, and Cherry birch, is well known for its fragrant and aromatic bark. Its young twigs are dark coloured, and spotted with white. Its leaves are smooth, ovate, heart-shaped at base, ending in a long point, with very acute, double serratures at the edge, and distinct, parallel veins underneath. The barren aments are pendulous; scales of the calyx three cleft; corolla three petalled; anthers many; the fertile ones straight.

The wood of the black birch possesses many valuable qualities. It is compact, smooth, of a reddish colour, very strong, and not liable to warp and crack. It is considerably used in cabinet work, particularly for bedsteads.

BETULA EXCELSA. Ait.

Yellow Birch.

Leaves ovate, acute, serrate; petioles pubescent. *Mc. f. sub. syn.*

Syn. BETULA LUTEA. Mc. f.

Common in the eastern parts of New England, and brought to Boston for fuel. It has considerable resemblance to *B. lenta*, but the cuticle has a yellowish colour. Fertile aments ovate, erect. Bark slightly fragrant. Wood valuable.

414. CORYLUS.

CORYLUS AMERICANA. Walt.

Common Hazel.

Calyx of the fruit rounded and bell shaped, larger

than the nut, its border dilated, tooth-serrate; leaves roundish, heart-shaped, acuminate. *Willd.*

The common hazel nut is a slender shrub, usually growing in bunches about the borders of fields. The barren flowers grow in long, pendulous aments; the scales of the calyx ciliated with the middle portion acuminate. Anthers about eight. The fertile flowers grow in a sort of buds, on a different part of the branch. The nuts, which are nearly equal in quality to the European, grow in large bunches, each one invested with a large, hairy calyx, extending considerably beyond the nut.—April.

CORYLUS ROSTRATA. Ait.

Beaked Hazel.

Leaves oblong-ovate, acuminate; stipules linear-lanceolate; calyx of the fruit campanulate-tubular, longer than the nut, two parted, with toothed segments.

A smaller shrub than the foregoing. Leaves ovate or obovate, somewhat hearted, unequally and sharply serrate, downy underneath. Calyx inclosing the nut, densely hispid, round at base, contracted like a bottle into a long, narrow neck which is cut and toothed at the extremity.—Sudbury.—May.

415. CARPINUS.

CARPINUS AMERICANA. Willd.

Hornbeam.

Leaves oblong-ovate, acuminate, unequally serrate; calyx of the fruit three parted, the middle segment oblique, toothed on one side.

A small tree with sharply serrated leaves. Barren and fertile aments small. The fruit is a leafy spike formed from the enlarged ament, having alternate pairs of calyx leaves, which are large, oblique, auriculate at base, toothed on the lower, and entire on the upper side. Seed or nut naked, dark coloured, heart shaped, acute, ribbed.—Woods, Roxbury, rare.—April, May.

The name *Hornbeam* is often applied in this state to *Nyssa aquatica*.

416. OSTRYA.

OSTRYA VIRGINICA.

Hop Hornbeam. Iron Wood.

Cones oblong-ovate; leaves oblong-ovate, acuminate; buds acute.

This tree is generally of small size, and remarkable for the fine division of the outer bark of its trunk. The leaves are alternate, ovate, a little hearted at base, finely and acutely serrate, acuminate. Barren flowers in pendulous aments; scale of the calyx entire, acuminate, strongly ciliated; anthers many, bearded at tip. Fertile ones enlarging into a sort of oblong cone, in appearance resembling the common hop. The fruit is extended, not pendulous, and composed of oval, compressed, mucronated vesicles or inflated capsules, bristly at base, lying over each other and containing a compressed, ovate seed at bottom.

The wood is hard, close grained, and heavy. In some parts of the country it has acquired the name of *Lever wood*, from the use to which it is applied.

417. PLATANUS.

PLATANUS OCCIDENTALIS. *L. Plane Tree. Button Wood. Sycamore.*

Leaves lobed-angular; branches whitish. *Mich.*

This tree, commonly known by the name of Button wood, attains to an extraordinary size. Trees are said to be found in the western states, whose trunks measure from forty to fifty feet in circumference. With us it is one of the largest native trees. The leaves are broad and lobed, with many acute segments. When young they are downy at the veins underneath. On breaking off the petiole, the next year's bud is found concealed within its base. The flowers grow in balls or globular aments, and are succeeded by long seeds, furnished with a fine reddish down at base. The receptacle of the seeds, constituting the nucleus of the ball, is hard and woody, and closely enveloped by a regular net work, which may be easily detached. The balls are retained all winter on the trees by their tough, fibrous stalks. Each year the outer bark of the branches scales off to a determinate extent, leaving a white surface beneath it. This circumstance distinguishes the tree at sight from all others around it.

The wood is fine grained, and is susceptible of a good polish. It is however said to be liable to warp, and by no means durable when exposed to the weather.

MONADELPHIA.

418. PINUS.

PINUS RIGIDA. L.

Pitch Pine.

Leaves in threes ; cones ovate, clustered ; spines of the scales reflexed ; sheaths of the leaves short. *Lamb.*

The Pitch Pine is a very common inhabitant of barren, sandy tracts of land. Its bark is very thick, and rough with deep, irregular clefts. The leaves are of moderate length, needle shaped, and united three together in a common sheath. The cones are ovate or pyramidal, the scales rigid, each one armed with a short, acute, reflexed spine.

The wood abounds in turpentine, and contains a large portion of alburnum or sap. It is occasionally employed in building, but is chiefly used as a light fuel, under the form of "split pine."

PINUS STROBUS. L.

White Pine.

Leaves in fives ; cones cylindrical, longer than the leaves, loose. *Ait.*

This noble and very useful tree rises with a straight trunk to an uncommon height. Its bark is comparatively smooth, and in young trees it is without fissures. The branches are given off in whorls or circles. The leaves are much finer and more delicate than in the last species. They grow in fascicles of five together, with hardly any sheaths. The cones are very long, cylindrical, curved, and pendulous ; composed of large, smooth, loose scales.

The trunk possesses very little resin, and its portion of sap wood is comparatively small. The texture of the wood is fine and soft. No tree is more extensively employed in building, or for the ordinary purposes of carpenters' and joiners' work. The large trees are particularly in request for the masts of ships, and vast quantities of the wood have been annually exported from the eastern coast in the form of timber and boards.

PINUS NIGRA. *Ait.*

Black or double Spruce.

Leaves solitary, four cornered, erect, straight; cones ovate, scales elliptical, waved at the edge, erect. *Lamb.*

Syn. ABIES NIGRA. Mich.

The branches of the double Spruce are thickly covered on all sides with short, dark coloured, linear leaves, inserted laterally and singly. The cones are small, oval, pendulous, composed of thin scales, which are waved and crenate, or partially cleft on the edge.

This tree is not very common, unless cultivated, in the environs of Boston. At the eastward it is frequent. Its wood is light, strong, and elastic, and much used for the smaller spars of vessels.

PINUS CANADENSIS. *L.*

Hemlock Spruce.

Leaves solitary, flat, denticulate, nearly in two rows; cones ovate, terminal, hardly longer than the leaves. *Lamb.*

Syn. ABIES CANADENSIS. Mich.

The Hemlock spruce occurs frequently in woods in the vicinity of Boston. It is a straight tree, remarkable for the horizontal arrangement of its branches and leaves. The leaves are in two rows, close, linear-oblong, obtuse, nearly flat beneath, a little convex above. When examined with a glass, they are found edged with minute teeth. Cones ovate-oblong, very small.

The wood of the Hemlock is occasionally substituted for Pine, to which it is inferior, in building. The bark possesses the tanning principle in great perfection, and is used in the preparation of leather as a substitute for, or in combination with the bark of the oaks.

PINUS MICROCARPA. *Lamb.*

Red Larch. Hacmatack.

Leaves fascicled, deciduous; cones roundish, few flowered, with inflected scales; bractes elliptic, obtusely acuminate. *Lamb.*

Syn. LARIX AMERICANA. Mich.

The Larch is a fine tree, differing remarkably from the Pines, already mentioned, in its leaves, which fall at the approach of

winter. They grow in tufts or fascicles, on the sides of the branches, which are mostly horizontal. The tree flowers with small aments, the barren ones containing two anthers under each scale, and the fertile ones two germs. These last are succeeded by small cones, with soft scales, inflected at the edge. Seeds small, winged. This tree attains the height of eighty or ninety feet. Its wood is strong and durable, and is used in ship building. It frequents a low, moist soil.

419. CUPRESSUS.

CUPRESSUS THUYOIDES. L.

White Cedar.

Branchlets compressed; leaves in four rows, imbricated, ovate, tuberculated at base. *Willd.*

The White Cedar grows naturally in wet situations, sometimes occupying considerable tracts of marshy land, known by the name of *Cedar swamps*. The small branches are finely subdivided, their last divisions compressed, and covered by four rows of short, minute leaves, the two lateral rows longest. Each leaf is furnished with a minute tubercle or gland on the back, near its base. Cones extremely small, angular, and somewhat spherical.

The wood is light, soft, and very durable. It is used for shingles, for wooden vessels, also for fencing and other purposes where durability is required. This tree and the last are found occasionally, but not frequently, in the neighbourhood of Boston.

420. THUYA.

THUYA OCCIDENTALIS. L.

Arbor vitæ. Hacmatack.

Branchlets ancipital; leaves imbricate four ways, ovate-rhomboidal, appressed, naked, tuberculated; cones obovate, the inner scales truncated, and gibbous below the tip.

This tree, remarkable for the flat or two edged form of its twigs, is known in different parts of the country by the name of *White Cedar* and *Hacmatack*. The twigs are much broader than those of *Cupressus Thuyoides*, the cone loose with few long scales, unlike the globular fruit of the Cedar. Wood soft, but very durable.—In Maine, New Hampshire.

421. ACALYPHA.

ACALYPHA VIRGINICA. L. *Three seeded Mercury.*

Pubescent, leaves on short petioles, lance-oblong, serrate; involucre subsessile, axillary, nerved, cut into acute, crested segments. *Mich. abr.*

An annual plant of ordinary appearance. Branches pubescent. Leaves ovate-lanceolate, with a rather obtuse point, remotely serrate or crenate at the edge, somewhat three nerved. Involucres of the fruit axillary, hairy, on short stalks, their edge cut into a number of long, acute, ciliated segments or teeth.—Woods, Cambridge.—August.



Class XXII. DIÆCIA. *Barren and fertile flowers on different plants.*

Order II. DIANDRIA. *Two stamens.*

422. VALLISNERIA. Barren flowers, spathe two-parted; spadix covered with florets; corolla three-parted. Fertile flowers, spathe cloven, one flowered; calyx three parted, superior; corolla three petalled; stigma three parted; capsule one celled.

423. SALIX. Calyx scale of an ament; corolla none. In the barren flowers, from one to five stamens, with a nectariferous gland at the base. In the fertile flowers, two stigmas; capsule one celled, two valved; seeds downy.

Order III. TRIANDRIA. *Three stamens.*

424. EMPETRUM. Calyx three parted; corolla three petalled. Barren flowers, stamens from three to nine, very long. Fertile flowers, styles from three to nine; berry from three to nine seeded.

Order IV. TETRANDRIA. Four stamens.

425. MYRICA. Calyx a concave scale of the ament ; corolla none ; styles two ; berry one seeded.

Order V. PENTANDRIA. Five stamens.

426. HUMULUS. Barren flowers, calyx five leaved ; corolla none. Fertile flowers, calyx an oblique, entire scale of an ament ; corolla none ; styles two ; seed solitary, coated.

427. ACNIDA. Barren flowers, calyx five leaved ; corolla none. Fertile flowers, calyx two leaved ; corolla none ; styles five ; seed one, covered with the succulent calyx.

Order VI. HEXANDRIA. Six stamens.

428. SMILAX. Calyx six leaved ; corolla none ; styles three ; berry three celled ; seeds two.

429. DIOSCOREA. Calyx six parted ; corolla none. Fertile flowers, styles three ; capsules three celled, compressed ; seeds two, membranaceous.

Order XII. POLYANDRIA. Many stamens.

430. POPULUS. Calyx a lacerated scale of the ament ; corolla turbinate, oblique, entire. In the fertile flowers, stigma four cleft ; capsules two celled, many seeded.

Order XIII. MONADELPHIA. Stamens united.

431. JUNIPERUS. Barren flowers, calyx the scales of an ament ; corolla none ; stamens three. Fertile flowers, calyx scales of an ament, fewer, three parted, becoming fleshy, united into a three seeded berry.

432. TAXUS. Barren flowers, calyx none ; corolla none ; stamens numerous ; anthers peltate, eight cleft. Fertile flowers, calyx cup shaped, entire ; style none ; seed one, imbedded in the fleshy calyx.

DIÆCIA.

DIANDRIA.

422. VALLISNERIA.

VALLISNERIA AMERICANA. *Mr.**Vallisneria.*

Leaves linear ; stalks of the barren and fertile flowers straight.

The long, linear, obtuse leaves of this plant are found at the bottom of stagnant waters stretching upward toward the surface. I have not seen it in flower, but have repeatedly collected what, I have no doubt, are the leaves. In the European plant, of which this appears to be a cospecies, or variety, the fertile flowers float on the surface, being connected with the root by spiral stalks. The barren flowers grow near the bottom, but break off, and rise to the surface before shedding their pollen.—In Fresh pond, Cambridge.

423. SALIX.

SALIX ERIOCEPHALA. *Mich.**Swamp Willow.*

Diandrous ; twigs downy ; leaves oblong-oval, somewhat retuse at base, serrulate ; aments oval, exceedingly villous. *Mich.*

A small tree, common in low, moist grounds, where its woolly aments expand during the month of March, and are usually in flower the first week in April. The scales of both the barren and fertile aments are covered with very long, even, smooth, silken hairs, which at a distance give them a woolly appearance. In the barren aments each scale produces two long, yellow anthers ; in the fertile ones, which exceed the last in length, they support an oblong, tapering, downy germ. Leaves oval-oblong, nearly entire, green above, glaucous and somewhat downy beneath. Stipules half cordate, deciduous.

SALIX DISCOLOR. *Willd.**Bog Willow.*

Leaves oblong, rather obtuse, smooth, remotely serrate, entire at the end, glaucous underneath ; stipules deciduous, lanceolate, serrate ; aments nearly cotemporary, diandrous, oblong, downy, the scales oblong,

acute, black, hairy; germs subsessile, lanceolate, downy; stigma two parted.

This willow with dark coloured branches, and a whitish under-side to the leaves, grows in wet swamps at Dedham.—April.

SALIX VITELLINA. L.

Yellow Willow.

Leaves lanceolate, acuminate, closely serrate, smooth above, paler beneath; stipules none; aments nearly cotemporary, cylindrical, the scales ovate-lanceolate, pubescent outside; germs sessile, ovate-lanceolate, smooth, stigmas subsessile, two lobed.

This tree, distinguished by the yellow bark of its twigs, and now become extremely common in all soils, was probably first introduced from Europe.—May.

SALIX VIMINALIS. L.

Osier. Basket Willow.

Leaves linear-lanceolate, very long, acuminate, entire, silken underneath; branches virgated; style elongated. *Sm.*

This is one of the most beautiful species, remarkable for its long, slender, flexile twigs, and the silken, silvery pubescence which covers the under side of the leaves.—In swamps, at Danvers and elsewhere.—May.

TRIANDRIA.

424. *EMPETRUM.*

EMPETRUM NIGRUM. L.

Crowberry. Crakeberry.

Stems procumbent.

A prostrate shrub, with small, dense, evergreen foliage, like that of the heaths. Leaves imbricate, scarcely petioled, oblong, obtuse, revolute at the edge. Flowers axillary, very small, reddish. Berry roundish, black.—On the summits of the White mountains.—June.

TETRANDRIA.

425. MYRICA.

MYRICA GALE. L.

Sweet Gale. Dutch Myrtle.

Leaves wedge-lanceolate, slightly serrate above; barren aments imbricate, the scales ciliate; fruit in scaly heads. *Mich.*

A branching shrub, about four or five feet in height. Leaves alternate, lanceolate-wedge shaped, (their termination much more obtuse than in the European variety,) serrated and nearly smooth. Aments alternate, from the axils of the last year's leaves, short, oblong-ovate. The fruit has a strong, penetrating, spicy scent.—About the edges of Fresh pond.—April.

MYRICA CERIFERA.

Bayberry. Wax Myrtle.

Bigelow, Medical Botany, Pl. xliii.

Leaves wedge-lanceolate, with a few serratures at top; barren aments lax; fruit spherical, naked, distinct. *Mx.*

The Wax Myrtle is found in dry soils, bearing fruit at every size, from the height of one foot to that of six or eight. The top is much branched, and covered with a greyish bark. The leaves are wedge-lanceolate, varying in width, sometimes entire, but more frequently toothed, particularly toward the end. They are somewhat pubescent, a little paler beneath, and generally twisted or revolute in their mode of growth. They are inserted in a scattered manner by short petioles. The flowers appear in May before the leaves are fully expanded. The barren ones grow in catkins, which are sessile, erect, about half or three quarters of an inch long; originating from the sides of the last year's twigs. Every flower is formed by a concave rhomboidal scale, containing three or four pairs of roundish anthers on a branched foot-stalk. The fertile flowers, which grow on a different shrub, are less than half the size of the barren ones, and consist of narrower scales, with each an ovate germ, and two filiform styles. To these aments succeed clusters or aggregations of small globular fruits resembling berries, which are at first green, but finally become nearly white. They consist of a hard stone inclosing a dicotyledonous kernel. This stone is

studded on its outside with small, black grains resembling fine gunpowder, over which is a crust of dry, white wax, fitted to the grains, and giving the surface of the fruit a granulated appearance. Botanically speaking this fruit has been improperly called a berry and a drupe; since it is always dry and never invested with a cuticle, or any thing but the grains and wax.

The wax is procured for use by boiling the berries in water till it melts and floats on the surface. See American Medical Botany, volume iii.

PENTANDRIA.

426. HUMULUS.

HUMULUS LUPULUS.

Common Hop.

Bigelow, Medical Botany, Pl. lx.

The root of the Hop vine is perennial. Stems annual, twining from right to left, angular, rough, with minute, reflexed prickles. Leaves opposite, on long winding petioles, the smaller ones heart-shaped, the larger ones three or five lobed, serrated, veiny and extremely rough. Flowering branches axillary, angular and rough. Stipules two or four, between the petioles, ovate, reflexed. Flowers numerous and of a greenish colour. Those of the barren plants are very numerous and panicled. Their calyx has five oblong, obtuse, spreading, concave leaves. Corolla wanting. Stamens short; anthers oblong, and bursting by two terminal pores. The fertile flowers, growing on a separate plant, are in the form of an ament, having each pair of flowers supported by a calyx-scale, which is ovate, acute, tubular at base. Corolla of one scale, obtuse, smaller than the calyx, and placed one on each side of it, infolding the germ by their edge. Germ roundish, compressed; styles two, short; stigmas long, subulate, downy. The scales of the calyx and corolla swell into a kind of persistent cone or strobile, each flower producing a roundish seed. The hop vine appears to be a native of this continent, being found wild in all parts of the United States.

427. ACNIDA.

ACNIDA CANNABINA. L.

Sea Hemp.

Leaves lanceolate; capsules smooth, acute angled.

A green-flowering plant of the salt marshes. Stem erect, furrowed, smooth, fleshy. Leaves petioled with a long, obtuse point. Flowers in leafy spikes, axillary and terminal. Barren and fertile flowers on different plants. Calyx of the fertile flowers three leaved; germ ovate; stigmas three.—Marsh near the Punchbowl, Brookline.—August.—Annual.

HEXANDRIA.

428. SMILAX.

SMILAX ROTUNDIFOLIA. *L.*

Green Briar.

Stem prickly, round; leaves unarmed, heart-shaped, pointed, five or seven nerved.

A hardy and very troublesome vine, climbing upon trees and bushes, and forming, with its thorny branches, almost impassable thickets. Stem smooth, woody, strong, armed with short, straight, rigid thorns, proceeding from the wood. Leaves large, smooth, roundish-heart shaped, ending in a short point, commonly five nerved. Tendrils very strong, from the top of the stipules. Umbels of flowers small, on short, axillary stalks. Berries small.—Moist woods.—June.

SMILAX PEDUNCULARIS. *Muhl.*

Long stalked Smilax.

Stem round, unarmed; leaves roundish-ovate, acuminate, nine nerved, peduncle of the fertile umbel longer than the leaves.

A rank, herbaceous, climbing plant. Stem round, smooth, attaching itself to other plants by its stipular tendrils. Leaves of the stem large, heart-shaped, with a short point, petioled, smooth, with about nine nerves. Flowers small, greenish, with an offensive odour, in simple umbels, on very long, axillary, peduncles. The fertile ones are succeeded by large bunches of rounded, compressed, crowded, bluish berries. The axils of many of the leaves give rise to short, barren branches, supporting half a dozen, ovate, five nerved leaflets.—June.—Perennial.

429. DIOSCOREA.

DIOSCOREA VILLOSA.

Villous Dioscorea.

Leaves alternate, opposite and whorled, cordate,

acuminate, pubescent underneath, nine nerved, the lateral nerves simple.

Syn. *DIOSCOREA PANICULATA.* *Mx.*

A delicate, slender-twining vine. Stem twisted and winding from right to left. Petioles reflexed, contorted, channelled. Leaves heart shaped, acuminate, entire, beautifully marked with long, distinct, single nerves, glabrous above, smooth or villous beneath. Flowers minute, alternate, sessile, on long, filiform, axillary peduncles. Calyx in the barren flowers in six ovate segments, with six minute anthers. Fruit inversely heart-shaped, three winged.—Woods on the Concord turnpike, rare.—May, June.—Perennial.

POLYANDRIA.

430. POPULUS.

POPULUS TREMULOIDES. *Mich.* *American Aspen.*

Leaves roundish, abruptly acuminate, serrulate, pubescent at the edge. *Mich. f.*

The small, tremulous leaves of this Poplar have great affinity to those of the European Aspen, whose quivering foliage has long been proverbial. The tree somewhat exceeds the middle size. The flowers appear in April, long before the leaves, in pendulous, silken aments; the calyx of the barren flowers of a dark, chesnut colour with a fringe of white hairs. Corolla white. Anthers numerous, deep brown with white pollen. The leaves are small, compared with other species, light, roundish, scarcely hearted at base. The bark is smooth, and the wood light, fine, soft, and perishable.

POPULUS GRANDIDENTATA. *Mich.* *Large Aspen or Poplar.*

Petioles compressed; leaves round-oval, smooth both sides, unequally sinuate, with large teeth, the younger ones villous. *Mich. f.*

Syn. *POPULUS TREPIDA.* *Muhl.*

This tree is occasionally met with in our woods, but is much less common than the preceding species. It is easily distinguished from the various cultivated poplars by the large, unequal in-

dentations on the margin of the leaves. The leaves, as Michaux observes, are covered when young with a white down, which disappears as they grow older. In many instances they are furnished with a pair of glands at base. The aments, which are two or three inches long, appear in May. Wood much like the last.—Cambridge, Milton.

POPULUS CANDICANS. *Ait.*

Balm of Gilead Tree.

Leaves cordate, ovate, acuminate, obtusely and unequally serrate, whitish and somewhat three nerved beneath; petioles hairy; buds resinous; branches round.

This poplar is abundantly cultivated in New England, and proves troublesome by the rapidity with which it spreads. I have never seen it in woods.

MONADELPHIA.

431. JUNIPERUS.

JUNIPERUS VIRGINIANA.

Red Cedar.

Bigelow, Medical Botany, Pl. xlv.

Trunk arboreous, upper leaves imbricated in four rows, ovate, pungently acute.

The Red Cedar, sometimes called in this vicinity by the name of *Savin*, is a common tenant of dry, rocky hills. When full grown, it is a middling sized tree. Trunk straight, decreasing rapidly from the ground, and giving off many horizontal branches. Its surface is generally unequal and disfigured by knots. The small twigs are covered with minute, densely imbricated leaves, which increase in size as the branch grows, till they are broken up and confounded with the rough bark. These leaves are fleshy, ovate, concave, rigidly acute, marked with a small, depressed gland on the middle of their outer side, in pairs, united at base to each other and to the pairs above and below them. A singular variety sometimes appears in the young shoots, especially those which issue from the base of the trees. This consists in an elongation of the leaves to five or six times their usual length, while they become spreading, acerose, considerably remote from each other, and irregular in their insertion, being either opposite or ternate. These shoots are so dissimilar

to the parent tree, that they have been repeatedly mistaken for individuals of a different species. The barren flowers grow in small oblong aments, formed by peltate scales with the anther concealed within them. The fertile flowers have a proper perianth, which coalesces with the germ and forms a small, roundish berry, with two or three seeds, covered on its outer surface with a bright blue powder. The wood of the Red Cedar is light and very durable. It constitutes an excellent material for posts, to which use it is commonly appropriated with us. The leaves resemble Savin in their medicinal properties, and are particularly used as a topical stimulant.

JUNIPERUS COMMONUNIS.

Common Juniper.

Bigelow, Medical Botany, Pl. xlv.

Leaves ternate, spreading, mucronate, longer than the berry.

Variety *depressa*. Stems prostrate.

Syn. JUNIPERUS REPENS. Nutt.

The Juniper is with us always a shrub, never rising into a tree. The stems are prostrate, rooting, and forming large beds. The tips of the branches are smooth and angular. Leaves in threes, linear-acerose, sharply mucronate, shining green on their lower surface, but with a broad glaucous-line through the centre of the upper. The leaves always resupinate, and turn their upper surface toward the ground. The barren flowers grow in small axillary aments, with roundish, acute, stipitate scales, inclosing several anthers. The fertile flowers, growing on a separate shrub, have a small three parted calyx growing to the germ; and three styles. The fruit is a fleshy, roundish, oblong berry, of a dark purplish colour, formed of the germ and confluent calyx, marked with three prominences or vesicles at top, and containing three seeds. It requires two seasons to arrive at maturity from the flower.—In dry woods, Roxbury, Brookline.

432. TAXUS.

TAXUS CANADENSIS. *Willd.*

Dwarf Yew.

Leaves linear, two ranked, revolute at the edge; receptacles of the barren flowers globose.

Syn. TAXUS BACCATA, minor. Mx.

A low spreading shrub, known in Maine by the name of *Ground hemlock*. The leaves, in their arrangement, resemble those of *Pinus Canadensis*, but are larger. The fruit resembles a berry, the seed being imbedded in the fleshy calyx.—Hallowell, Maine.



Class XXIII. POLYGAMIA. Perfect flowers together with barren, or fertile, or both, on the same or distinct plants.

Order I. MONŒCIA. Barren, fertile, and perfect flowers, found on one plant.

433. *CELTIS*. Perfect flowers, calyx five parted; corolla none; stamens five; styles two; drupe one seeded. Barren flowers, calyx six parted; corolla none; stamens six.

434. *ATRIPLEX*. Perfect flowers, calyx five parted; corolla none; stamens five; style two parted; seed one depressed. Fertile flowers, calyx two leaved; corolla none; style two parted; seed one compressed.

435. *VERATRUM*. Calyx none; corolla six parted; stamens six. Perfect flowers, pistils three; capsules three; many seeded. Barren flowers containing the rudiment of a pistil.

Order II. DIŒCIA. Barren, fertile, and perfect flowers on different plants.

436. *PANAX*. Umbel simple. Perfect flowers, calyx five toothed, superior; corolla five petalled; stamens five; style two; berry two seeded. Barren flowers, calyx entire; petals five; stamens five.

437. *XANTHOXYLUM*. Calyx inferior, five parted; corolla none; flowers barren, fertile, and perfect; capsules from three to five, one seeded.

438. ACER. Calyx five cleft; corolla five petalled; stamens eight; capsules two or three, one seeded, terminated by a wing. Barren flowers without germ or style.

439. NYSSA. Perfect flowers, calyx five parted; corolla none; stamens five; pistil one; drupe inferior. Barren flowers, stamens ten.

440. FRAXINUS. Perfect flowers, calyx none or four parted; corolla none or four petalled; stamens two; pistil one; capsule flattened; seeds mostly solitary, pendulous. Fertile flowers, pistil one, lanceolate.

POLYGAMIA.

MONŒCIA.

433. CELTIS.

CELTIS OCCIDENTALIS. L.

Nettle Tree.

Leaves ovate, acuminate, unequally serrate, unequal at base, rough on the upper side, hairy underneath; fruit solitary.

This tree, known in some parts of the United States by the names of *Hoop Ash* and *Beaver tree*, is rare in this vicinity. I have only met with it at Squantum and on Bear hill at Waltham. The leaves are nearly as large as those of the Elm and remarkably oblique at base. Flowers small, whitish. Fruit dark purple, pedunculated, not larger than the whortleberry.—May.

434. ATRIPLEX.

ATRIPLEX PATULA. L.

Spreading Orache.

Stem herbaceous, spreading; leaves deltoid-lanceo-

late, somewhat hastate; calyx of the seed somewhat muricate on the disc. *Sm.*

Stem spreading, very much branched. Leaves powdery underneath, the lower ones mostly hastate, the upper ones lanceolate. Racemes axillary and terminal. The seed is inclosed between two large, triangular valves, furnished on their back with an irregular number of short, conical points.—Salt marshes.—August.—Annual.

435. VERATRUM.

VERATRUM VIRIDE. *Ait.* *Poke Root.* *American Hellebore.*

Bigelow, Medical Botany, Pl. xxxiii.

Panicle downy; partial bractes longer than their pedicels. Segments of the corolla thickened on the inside at base.

A large, green, leafy plant, not uncommon in meadows and swamps. The root is thick and fleshy, its upper portion tunicated, its lower half solid and sending forth a multitude of large, whitish radicles. The stem is from three to five feet high, roundish, solid, striated and pubescent. Throughout the greater part of its length it is closely invested with the sheathing bases of the leaves. The lower leaves are large, from half a foot to a foot long, oval, acuminate, pubescent, strongly plaited and nerved; the lower part of their edges meeting round their stem. The upper leaves become gradually narrower, and the uppermost, which perform the office of bractes, are linear-lanceolate. The flowers are numerous and distributed in compound racemes, axillary from the upper leaves, and terminal; the whole forming a sort of panicle. Peduncles roundish, downy. Bractes boat-shaped, acuminate, downy. The pedicel of each flower is many times shorter than its bracte. Calyx none. Corolla divided into six green, oval, acute, nerved segments, of which the alternate ones are longest. All the segments are contracted at base into a sort of claw with a thickened or cartilaginous edge. Stamens six with recurved filaments and roundish, two lobed anthers. Germs three, cohering, with acute recurved styles as long as the stamens. A part of the flowers are barren and have only the rudiments of styles, so that the plant is strictly polyga-

mous. The seed vessel consists of three capsules united together, separating at top and opening on their inner side. Seeds flat, imbricated.—June.—Perennial.

The root of this plant, when taken internally, produces violent effects, and is dangerous in considerable quantities. It is chiefly used in the country as an external application in cutaneous affections. From its great affinity in habit to the *Veratrum album*, an European species, which has lately acquired considerable celebrity as a remedy in gout; the American plant is particularly entitled to the attention of physicians.

DICLIA.

436. PANAX.

PANAX QUINQUEFOLIUM.

Ginseng.

Bigelow, Medical Botany, Pl. xxix.

Root fusiform; leaves three, quinate; leaflets oval, acuminate, serrate, petioled.

The root of the Ginseng consists of one or more fleshy, oblong and somewhat fusiform portions, of a whitish colour, transversely wrinkled, and terminating in various radicles. Its upper portion is slender and marked with the scars of the former shoots. Stem smooth, round, green, with often a tinge of red, regularly divided at top into three petioles, with a flower stalk at their centre. Petioles round, smooth, swelling at base. Leaves three, compound, containing five, rarely three or seven leaflets. The partial leaf stalks are given off in a digitate manner, and are smooth, compressed and furrowed above. Leaflets oblong, obovate, sharply serrate, acuminate, smooth on both sides, with scattered bristles on the veins above. The flowers, which are small, grow in a simple umbel on a round, slender peduncle, longer than the petioles. The involucre consists of a multitude of short subulate leaflets, interspersed with the flower stalks. These stalks or rays are so short as to give the appearance of a head, rather than an umbel. In the perfect flowers the calyx has five small, acute teeth; the corolla five petals, which are oval, reflexed and deciduous. Stamens five, with oblong anthers. Styles two, reflexed, persistent; germ large, inferior, ovate-heart shaped, compressed. The berries are kidney shaped, retuse at both ends, compressed, of a bright scarlet co-

four, crowned with the calyx and styles, and containing two semi-circular seeds. In most umbels there are flowers with only one style, in which case the berry has a semi-cordate form. Sometimes there are three styles and three seeds. The outermost flowers ripen first, and their berries often obtain their full size before the central ones are expanded. The middle flowers are frequently abortive. There are also barren flowers, on separate plants, which botanists describe as having larger petals and an entire calyx.—In Northampton and on the Ascutney mountain.—June, July.—Perennial.

The root of Ginseng is in high estimation among the Chinese, and formerly constituted a profitable article of export to Canton.

PANAX TRIFOLIUM. L.

Dwarf Ginseng.

Root tuberous; leaves three, ternate or quinate; leaflets wedge-lanceolate, subsessile, serrate.

The herb considerably resembles that of *Anemone nemorosa*. Root tuberous, deep in the ground, globular, of the size of a pistol bullet. Stem smooth, simple. Leaves compound, three in number, given off in a whorl. Petioles smooth, channelled above. Leaflets three, four or five, nearly sessile, wedge-lanceolate, serrate, smooth with generally a few short bristles from the upper side of the veins. Peduncle a little angular, terminating in a simple umbel of small white flowers. Involucre many leaved. The barren umbels have a short white calyx, scarcely toothed, five obovate petals, five stamens, growing upon the calyx, and one style. The fertile umbels have a greenish calyx, white, deciduous petals, no stamens, and three styles. Berry three celled.—Low grounds, rare.—Sent from Danvers by Dr. Nichols.—Found at Malden by Mr. Little.—Perennial.

437. XANTHOXYLUM.

XANTHOXYLUM TRAXINEUM.

Prickly Ash.

Bigelow, Medical Botany, Pl. lix.

Prickly; leaves pinnate; leaflets ovate, subentire, sessile, equal at base; umbels axillary.

The branches of this shrub are covered with strong, sharp prickles, arranged without order, most frequently in pairs, at the insertion of the young branches. Leaves pinnate, the common petiole sometimes unarmed and sometimes prickly on the back.

Leaflets about five pairs, with an odd one, nearly sessile, ovate, acute, with slight vesicular serratures, somewhat downy underneath. The flowers appear in April and May before the leaves are expanded. They grow in sessile umbels about the origin of the young branches, are small and greenish. I have observed them of three kinds, making the shrub strictly polygamous. In the stamiferous flower, the calyx is five leaved, leaves oblong, obtuse, erect. Stamens five, with subulate filaments and sagittate four celled anthers. In the place of the pistils are three or four roundish corpuscles supported on pedicels from a common base. The perfect flowers growing on the same plant have the calyx and stamens like the last; the germs are three or four, pedicelled, and having erect, converging styles nearly as long as the stamens. The pistiliferous flowers grow on a separate shrub. Calyx smaller and more compressed. Germs about five, pedicelled; styles converging into close contact at top, and a little twisted. Stigmas obtuse. All the flowers are destitute of corolla. Each fertile flower produces an umbel of as many stipitate capsules as there were germs in the flower. These capsules are oval, covered with excavated dots, varying from green to red, two valved, one seeded; seed oval, blackish.—Woods, Medford.—April, May.—Perennial.

The rind of the capsules has an agreeable lemon like scent. The bark is pungent, and is used in rheumatism.

438. ACER.

ACER RUBRUM. *L.**Swamp Maple. Red Maple.*

Leaves palmate-five lobed, unequally toothed, pubescent, and at length glaucous underneath, the sinuses acute; fertile flowers aggregate, with rather long stalks. *Mich.*

This maple grows plentifully in our swamps and low woods. The flowers appear in April and May, each bud producing a fascicle or sessile umbel of about five crimson flowers. In the barren flowers the calyx is about five parted with oval segments. Petals five, narrower and inflected. Stamens twice as long as the calyx. Perfect flowers on separate trees, later and smaller, the stamens included; styles two, exserted, recurved, pubes-

cent. Germs compressed, united, succeeded by a red fruit, known by the name of maple keys, consisting of a pair of small capsules, each terminated by a long, membranous appendage, resembling the wing of an insect. The leaves are opposite, rounded, or hearted at base, and divided into three or five principal lobes, separated by a large, acute notch. They are irregularly toothed, and glaucous underneath.

The wood of this species is close grained, smooth, and hard. It is much used in the manufacture of tables, chairs, and other kinds of furniture. A variety, denominated Curled Maple, occasioned by the serpentine course of the fibres in some old trees, has a beautiful, shaded appearance in cabinet work, and is also used for gun stocks, on account of its solidity and toughness.

ACER SACCHARINUM. L. Rock Maple. Sugar Maple.

Leaves five parted-palmate, glabrous, entire at the margin, glaucous underneath; flowers pedunculated, pendant. *Mich. f.*

The Rock Maple, though common in the interior, is rarely met with in the vicinity of Boston. Some young trees occur in the woods at Roxbury. The flowers of this species are yellowish, small, and supported by slender, drooping footstalks. The fruit is larger than in the Red Maple, and of a light greenish colour. The leaves have three or five principal lobes, separated by a sinus or notch, which is rounded, not angular, at bottom. They are pale, and sometimes downy on the under side.

The wood is hard, compact, and smooth. It is much used in cabinet work, particularly a beautiful variety denominated Bird's eye Maple, and a curled variety like that in the last species. It makes good fuel, though inferior to walnut and oak; and, with the *Betula papyracea*, it constitutes a greater portion of our eastern wood.

But the peculiar value of this tree consists in the sugar, which is obtained from its sap. A tree of the ordinary size will yield from twenty to thirty gallons of sap in a season. This sap is collected by boring holes in the trees, and affixing to them small troughs, which convey it into reservoirs prepared for its reception. It is then put into large kettles and boiled down, until it

is sufficiently inspissated to crystallize or grain. It thus forms the raw sugar, which may be purified in the usual way.

ACER DASYCARPUM. Willd. *White Maple.*

Leaves palmate-five lobed, truncated at base, unequally cut toothed, white and smooth underneath, with obtuse sinuses; flowers crowded, with short pedicels and downy germs.

Syn. ACER ERIOCARPUM. Mx.

A tall tree with large leaves remarkably white underneath. Wings of the fruit very large, exceeding those of any species here mentioned, greenish. Wood softer and more perishable than in the others kinds.—Hanover, New-Hampshire, and Maine.

ACER STRIATUM. L. *Striped Maple. Moose Wood.*

Leaves rounded at base, with three acuminate lobes, sharply serrate, smooth; racemes simple, pendulous.

Syn. ACER PENNSYLVANICUM. Willd.

A beautiful small tree with striped bark. Leaves more simple in their structure than those of the other species, being simply three lobed. Flowers yellowish green, in simple pendulous racemes. Petals from eight to ten, obtuse. Stamens about eight. Fruit in long hanging clusters with pale greenish wings. Common in Worcester county.—June.

ACER MONTANUM. L. *Mountain Maple.*

Leaves about five lobed, acute, toothed, pubescent underneath; racemes erect, compound.

A shrub with pale greyish bark. Leaves three or five lobed, toothed, rugose, slightly pubescent underneath. Racemes erect with compound branches. Calyx segments short, acute. Petals five, linear, greenish white. Stamens shorter than the petals; anthers yellow. Germ compressed, inversely heart shaped or triangular. Style erect. Fruit winged, in compound, pendulous racemes.—Woods in the interior of Massachusetts &c.—June.

439. NYSSA.

NYSSA VILLOSA. *Mich.* *Tupelo Tree.* *Swamp Hornbeam.*

Leaves oval, entire, the petiole, middle nerve, and margin villous; fertile stalks about three flowered; nut short-obovate, obtusely striate. *Mich.*

This tree grows in swamps, and is frequently of a pyramidal form, with horizontal branches. The leaves are oval, entire, acute, tough and firm, paler on the under side, slightly pubescent on the margin and petiole, two or three inches in length. The flowers are small, obscure, of a green colour, collected on the end of a long peduncle. Each fertile peduncle produces two or three small, oblong drupes, of a deep blue colour, each containing an exceedingly hard, striated stone.

The wood of this tree is white, and moderately hard. Its fibres are closely interwoven, so as to render it extremely tough and difficult to split. In Massachusetts it is generally called *Hornbeam*, a name properly belonging to the genus *Carpinus*.

440. FRAXINUS

FRAXINUS AMERICANA. *Mich. f.*

White Ash.

Leaflets elliptic, acuminate, slightly toothed, petioled, glaucous underneath.

Syn. FRAXINUS DISCOLOR. Muhl.

This very valuable tree grows to the height of seventy or eighty feet. Its branches are opposite, and covered with bark of a very light colour. Leaves pinnate, consisting of about seven oval, acuminate leaflets, whitish underneath, entire or slightly toothed. The flowers grow in loose panicles from the axils of the last year's leaves. Their stalks have opposite branches with bractes at base. The barren flowers consist simply of two large, oblong, reddish anthers, proceeding from a minute dentated tubercle which seems to be a calyx. The fertile ones have a small calyx, an ovate germ, and a long style ending in two stigmas. They are succeeded by winged capsules, which are cylindrical at base, but dilated at their end into a long, flat appendage, somewhat lanceolate in form, but blunt or emarginate at the end. The wood of the common Ash is exceedingly durable, firm, and elastic, with a tolerable degree of

lightness. It is the principal material used in the manufacture of carriage frames, of light agricultural implements, of oars, blocks, boxes, &c.—May.



Class XXIV. CRYPTOGRAMIA. *Fructification anomalous or concealed.*

Order I. FILICES. *Ferns.*

441. EQUIRETUM. Floral receptacles peltate, many angled, collected into a spike; indusium corniculate; stamina four; style none; seed one.

442. LYCOPIDIUM. Capsules reniform, one celled, two valved, many seeded; seeds very minute, resembling powder.

443. BOTRYCHIUM. Capsules subglobose adnate to the rachis of the compound raceme, separate, naked, one celled; valves two, connected behind, opening transversely.

444. LYGODIUM. Spikes unilateral; capsules in two series, opening on the inner side from the base to the summit; indusium (or veil) squamiform, covering each capsule.

445. OSMUNDA. Capsules subglobose, pedicellate, striate, semibivalvular and paniculated; indusium none.

446. POLYPODIUM. Sori (or small clusters of capsules) roundish, scattered; indusium none.

447. WOODSIA. Sori roundish, scattered; indusium calyciform, open, with a hairy margin, including the pedicellate capsules.

448. ASPIDIUM. Sori roundish scattered; indusium umbilicate or opening on one side.

449. ONOCLEA. Capsules densely covering the back

of the frond ; indusia squamiform, connate in the form of berries and not expanding.

450. STRUTHIOPTERIS. Capsules densely covering the back of the frond ; indusia squamiform, marginal, opening internally.

451. ASPLENIUM. Sori linear, transversal, scattered ; indusia arising from the lateral veins, and opening towards the rib.

452. PTERIS. Sori continuous, linear, marginal ; indusium from the inflected margin of the frond, opening inwards.

453. WOODWARDIA. Sori oblong, distinct, straight, parallel with the ribs of the frond on either side ; indusia superficial, arched, opening inwards.

454. ADIANTUM. Sori oblong or roundish ; indusia membranaceous, arising from the margin of the frond and opening inwards.

455. DICKSONIA. Sori punctiform, marginal, roundish, and distinct ; indusium double, one superficial, opening outwards, the other marginal and opening inwards.

CRYPTOGAMIA.

FILICES.

441. EQUISETUM.

EQUISETUM HYEMALE. L. *Rough Horsetail. Scouring Rush.*

Stem naked, very rough, mostly branched at base ; sheaths whitish, black at the base and summit.

Found in moist woods at Lynn, and elsewhere. Stems erect, without branches, except at base, hollow, naked, furrowed, the

ridges rough with minute teeth, which are hardly visible without a glass. The joints of the stem are surrounded with short sheaths, coloured with black and white rings, and toothed at the top. The fruit grows in an ovate, terminal ament, composed of peltate, six sided scales, bearing the seeds inside.

The whole surface of the stem is rough, like a file, and is used in scouring and polishing metallic vessels. Its cuticle, according to Mr. Davy, contains a considerable portion of siliceous earth.—Perennial.

EQUISETUM ULIGINOSUM. Muhl.

Pipes.

Stems somewhat branched; branches from the middle joints, unequal.

A very tall, slender species, growing in the water at the edges of rivers and ponds. Stems erect, round, furrowed, nearly smooth. Joints invested with smooth sheaths ending in even, acute, black teeth. Both the barren and fertile stems are furnished with a few short branches, chiefly from about the middle joints. The lowermost and uppermost of these are generally single or in pairs, the rest in unequal whorls. Ament terminal, oblong-ovate.—Banks of rivers &c.—Perennial.

Under the name of *pipes*, this plant is prized by farmers as a valuable food for cattle, who are extremely fond of it.

EQUISETUM ARVENSE. L.

Field Horsetail.

Fertile scape naked; barren frond with whorled branches, decumbent. *L.*

The fruitful stems of this plant appear in April, and soon decay. They are erect, smooth, furrowed, and without branches, their joints surrounded with large, swelling sheaths, which end in long, blackish teeth. Spike terminal, oblong-ovate, with a membranous border below it. The barren stems are taller and more durable; they are erect, or ascending at base, roughish, their joints furnished with sheaths and large whorls of simple ascending branches. These branches are three or four cornered, with sheaths at their joints, ending in the same number of teeth.—Moist ground, South Boston.—Perennial.

EQUISETUM SYLVATICUM. *L.**Wood Horsetail.*

Branches compound, curving downward, rough.

The fertile stems are erect, round, furrowed, jointed. Joints invested with large, loose sheaths, which divide into a number of broad teeth at top. Branches very slender, in a whorl proceeding from the upper joint, immediately below the sheath, divaricated and curving downward. The second joint from the top is furnished with a whorl of shorter branches, and sometimes also the third. Ament ovate, terminal, composed like the rest, of peltate, hexagonal scales. The barren stems are smaller and higher, their joints all furnished with whorls of branches, which are much longer, and considerably subdivided.—Low grounds, Roxbury, Cambridge.—Perennial.

EQUISETUM SCIRPOIDES. *Max.**Small Horsetail.*

Stems simple, ascending, smooth, filiform, with spikes at top; sheaths three toothed, blackish, teeth awned, the tips caducous.

A very small species, not larger than the leaves of the foregoing. Stems simple, crowded, three or four inches high.—In Plainfield. Dr. Porter.

442. LYCOPODIUM.

LYCOPODIUM CAROLINIANUM. *Willd.* *Carolina Club Moss.*

Stem creeping; leaves two ranked, spreading, lanceolate; peduncle erect, solitary, elongated, one spiked; bractes sublanceolate.

A creeping species, keeping close to the ground in muddy soils, the peduncle being the only erect part. This is long, slender, and bears a single spike.—Found at Sandwich.

LYCOPODIUM CLAVATUM. *L.**Common Club Moss.*

Leaves scattered, ending in hairs; spikes in pairs cylindrical, pedunculated, the scales ovate, acuminate, toothed.

Stems very long, trailing and rooting. Leaves linear-lanceolate, spreading, nerveless, ending in a curved bristle. Flower-

ing stalks erect, with two or three spikes. Scales or bractes dilated at base.—Woods, Sweet Auburn.

LYCOPODIUM COMPLANATUM. L. *Flat Club Moss.*

Leaves two rowed, united, superficial ones solitary ; spikes in pairs, pedunculated.

A common, trailing evergreen. The stems, which creep on the ground for a considerable distance, are furnished with distinct, somewhat remote scales or leaves. Branches spreading, subdivided by regular forks, flattened, two edged. Leaves very short and acute. Peduncles elongated, forked at top, and usually supporting four erect, cylindrical spikes. Bractes closely imbricated, heart-shaped, acuminate.—Woods and pastures.—Perennial.

LYCOPODIUM RUPESTRE. L. *Rock Club Moss.*

Stems branching, rooting ; branches subdivided, ascending ; leaves scattered, imbricated, linear-lanceolate, ciliate, tipped with bristles ; spikes solitary, sessile.

A little plant, remarkable for the square form of its spikes. Leaves many rowed. Spikes terminal, four rowed, barely distinguishable from the leafy stem below them.—On rocks and dry hills.

LYCOPODIUM OBSCURUM. L. *Radiated Club Moss.*

Erect ; branches spreading ; leaves in six unequal rows ; spikes one or few, solitary, sessile.

The shoots of this species are erect, ascending at base, covered with small, imbricated, lanceolate leaves. Branches alternate, dividing by successive forks, the branchlets diverging like rays from a centre. Leaves in six rows, those of the lateral rows longest. Spikes terminal, solitary, sessile, cylindrical. Like others of the genus, they give out, when ripe, a great quantity of minute seeds, resembling a fine, yellow powder, and very inflammable.—Woods.—Perennial.

LYCOPODIUM DENDROIDEUM. Mx. *Tree Club Moss.*

Erect ; branches erect ; leaves in six equal rows ; spikes numerous, solitary, sessile.

Commonly quoted as a synonym of the preceding, but very distinct. The branches are always erect, and appear cylindrical from the equality of the leaves, whereas in the former they are spreading and appear flat from the unequal rows of leaves. Spikes in this numerous, in the other most frequently one.—Woods, Sudbury.

LYCOPODIUM SELAGO. *L.*

Fir Club Moss.

Leaves scattered, entire, lanceolate, awnless, in eight equal rows; stems dichotomous, erect, fastigiate; fruit axillary.

A dense, leafy species, distinguished from the following by its smaller size and entire leaves, while it resembles it in being destitute of spikes, the capsules growing in the axils of the leaves.—On the highest summit of the White mountains.

LYCOPODIUM LUCIDULUM. *Mich.*

Shining Club Moss.

Stems assurgent with a few longish branches; leaves spreading, shining, linear-lanceolate, serrate; fructification axillary. *Mich.*

Stems nearly erect, simple or dichotomous. Leaves in about eight rows, longer than in any of the preceding species, linear-lanceolate, somewhat reflexed, distinctly serrate, very acute, polished on both sides. Capsules axillary, semicircular. A small stem bulb is sometimes found occupying the place of a leaf.—Shady borders of ponds &c.

443. BOTRYCHIUM.

BOTRYCHIUM FUMARIOIDES. *Willd.*

Small Botrychium.

Stipe naked; frond glabrous, radical, three parted-bipinnate; segments crenate; spikes bipinnate.

A rather small fern with a single frond given off from the stipe near the root. This frond is petioled, more or less compound according to the size of the plant, but commonly ternate, the divisions pinnate and pinnatifid. Capsules globular, sessile, in two rows on the branchlets of a bipinnate panicle.—Dry pastures, Cambridge.

BOTRYCHIUM VIRGINICUM. *Willd.* *Rattlesnake Fern.*

Stipe bearing the frond in the middle; frond three parted-bipinnatifid, segments cut-toothed; spikes bipinnate.

Many times larger than the foregoing. The frond, which is given off about half way up the stem, is nearly sessile, divided into three principal branches, which are twice pinnate, the divisions pinnatifid and the segments toothed. Capsules in a twice pinnate, terminal panicle of little spikes.—Woods, Chelsea Beach island.

444. **LYGODIUM.**

LYGODIUM PALMATUM. *Sw.* *Climbing Lygodium.*

Stem flexuous, climbing; fronds conjugate, cordate, palmate with five lobes, lobes entire, obtuse; spikelets oblong-linear, in a compound terminal panicle.

Syn. *HYDROGLOSSUM PALMATUM.* *Pursh.*

CTEISIUM PANICULATUM. *Mx.*

An exceedingly delicate plant and, I believe, the only climbing fern found in our latitudes. Stem slender, smooth. Petioles alternate, forked near the stem, supporting two leaves or fronds, which are palmately divided into from five to nine lanceolate or oblong, obtuse segments, paler underneath. The fructification is found on the upper fronds, which grow like the lower on forked stalks, but are subdivided by alternate branches into a multitude of small, oblong-linear segments, having the fruit in two imbricated rows on the back.—At the Botanic garden, Cambridge, brought from Granby, Massachusetts.

445. **OSMUNDA.**

OSMUNDA CINNAMOMEA. *L.* *Tall Osmunda.*

Barren fronds pinnate; divisions elongated, pinnatifid; segments nearly oval and entire; fertile fronds with opposite racemes. *Mich.*

This noble fern grows in large bunches in damp woods and low grounds, sometimes attaining to the length of a man. The greatest part of the plant is composed by the barren fronds,

which are pinnate, their divisions cut into oblong, tapering, rounded, and somewhat acute segments. The fruit grows on a small separate frond, resembling a cluster of minute, brownish seeds. Its stipe is invested with loose, reddish wool, its divisions opposite, and completely covered with small, two valved, globular capsules.—Perennial.

OSMUNDA INTERRUPTA. *Mich.* *Interrupted Fern.*

Fronds pinnate; divisions opposite, pinnatifid; segments nearly oval and entire; some of the intermediate divisions fruitful. *Mich. abr.*

A pretty large, smooth fern, in habit resembling the last. The divisions of the frond are principally opposite, or nearly so, and subdivided into segments, much like the last species. Only a few pairs of the divisions, occupying a central part of the frond, become fruitful. These are much shorter than the rest; when full grown, they resemble compound, pyramidal racemes, and are covered on all sides with minute, brownish, capsules.—Low grounds.—Perennial.

OSMUNDA REGALIS. *L.* *Osmund Royal. Flowering Fern.*

Frond twice pinnate, terminating in a compound cluster of fructification.

A handsome, branching fern, found in meadows and moist grounds. Stipe smooth. Divisions pinnate. Leaflets or segments perfectly distinct and remote, oblong, very slightly serrated, the lower half of base longest. Capsules small, globular, two-valved, like the preceding species, arranged in a large, compound raceme at the top of the stipe.—Perennial.

446. POLYPODIUM.

POLYPODIUM VULGARE. *L.* *Common Polypody.*

Frond pinnatifid; segments linear-oblong, obtuse, slightly serrate.

A handsome fern, not uncommon on the sides of rocks and steep, shady hills, forming beds by means of its creeping roots. The stalk or stipe is perfectly smooth, grooved in the upper side. Fronds about half a foot long, divided in a pinnate manner almost to the stalk or midrib, by sinuses which are more

acute than in the European variety. Segments of the frond oblong, parallel, rounded at the end, very slightly serrate, furnished on the back with a double row of large, round, yellowish, granular, naked dots of fructification.—Perennial.

POLYPODIUM CONNECTILE. *Mr.* *Connected Polypody.*

Fronds twice pinnate, ciliate, the divisions opposite, contiguous, adnate; segments subelliptical; stipe chaffy, sori minute.

A middle sized fern, having its divisions connected at base, so as to form a continuous frond. Fructification in minute dots on the back.—Woods, Hallowell, Maine.

POLYPODIUM DRYOPTERIS. *L.* *Ternate Polypody.*

Frond ternate, twice pinnate; branches deflexed; segments obtuse, subcrenate; root filiform.

A tender and beautiful fern found in mountain woods. Stipe slender, smooth, less than a foot long. The frond divides into three branches, which are spreading and somewhat reflexed. Each of these is pinnate, the divisions pinnate or pinnatifid, with the larger segments crenate. Fructification in very small, distinct dots.—Near Hanover, New-Hampshire.

447. WOODSIA.

WOODSIA ILVENSIS. *Pursh?* *Hairy Woodsia.*

Fronds pinnate; divisions pinnatifid; segments obtuse; fructification near the margin, at length confluent; stipe villous.

Syn. *POLYPODIUM ILVENSE.* *Willd.*

This little plant is the *Polypodium ilvense* of Muhlenberg's catalogue, but seems somewhat different from the plant of Brown and Pursh. Stipe from three to six inches high, chaffy below, villous and woolly above. Frond pinnate, woolly underneath, the margin covered with fructification. Barren rocks and dry woods.

448. ASPIDIUM.

ASPIDIUM ACROSTICHOIDES. *Muhl.* *Terminal Shield Fern.*

Stipe chaffy; frond long, pinnate, its divisions alter-

nate, sessile, auriculated on one side at base, slightly serrate, ciliate ; only the upper ones fruitful. *Mich. sub. syn.*

Syn. NEPHRODIUM ACROSTICHOIDES. Mich.

Remarkable for the difference between its lower and upper leaves. The stipe is covered with loose, membranous, chaffy scales. The leaves or pinnæ are numerous, oblong, somewhat acute, edged with small, mucronate serratures, furnished with an angular lobe on their upper side at base. The lower leaves are without fruit ; the upper ones much smaller, covered with dots of fructification, which unite, so as to overrun the whole under surface.—Rocks and hills, Roxbury.—Perennial.

ASPIDIUM NOVEBORACENSE. Sm. New York Shield Fern.

Fronde pinnate ; divisions linear-lanceolate, pinnatifid, segments oblong, obtuse, entire, ciliate ; fruit marginal ; stipe smooth.

Syn. POLYPODIUM NOVEBORACENSE. L.

About the middle size, smooth and even, with obtuse segments, mostly entire.—Roxbury, Bussey's hill.—Perennial.

ASPIDIUM THELYPTERIS. Sm. Meadow Shield Fern.

Fronde pinnate, its divisions pinnatifid, subcrenate, distinct at base, decussating ; dots of fructification confluent. *Sm.*

Common in low, moist grounds, about the edges of meadows and swamps. Stipe glabrous. Divisions of the frond long and slender, the lower pairs frequently decussating, or crossing each other ; a circumstance which Dr. Smith has noticed in his specific character. They are pinnatifid, or deeply cut into oblong, roundish segments, which are slightly crenate at the edge, and revolute when in fruit. The first segments of each division are at a little distance from the stipe, and seem to form a parallel line on each side of it, running through the whole length of the frond, a character well represented in the figure of Plukenet. The fruit commences in small dots, and finally overruns the whole under surface of the frond.—Perennial.

ASPIDIUM LANCASTRIENSE. *Muhl.* *Lancaster Shield Fern.*

Fronde pinnate; divisions nearly opposite; segments triangular-ovate, acutely serrate; stipe naked.

Rather long and narrow. Fructification chiefly confined to the upper divisions, and in large, blackish dots.—Wet meadows, West Cambridge.—Perennial.

ASPIDIUM MARGINALE. *Sw.* *Marginal Shield Fern.*

Fronde pinnate, its divisions subpinnate, glabrous, with oblong, entire lobes, sinuate-repand at the base; dots marginal.

Syn. POLYPODIUM MARGINALE. L.

NEPHRODIUM MARGINALE. Mich.

A larger fern than either of the preceding. Stipe chaffy. Divisions of the frond nearly pinnate. Subdivisions or segments distinct, oblong, obtuse, crenate, contracted at base, afterward decurrent, so that their common stalk becomes slightly winged, or the division pinnatifid. Dots of fructification distinct, round, close to the margin. Their umbilicated involucre is very obvious.—Woods, Roxbury.—Perennial.

ASPIDIUM ASPLENOIDES. *Muhl.* *Dark Shield Fern.*

Stipe glabrous; frond twice pinnate; segments oblong, cut toothed; dots reniform, arranged near the nerve.

This is a large, smooth, brittle fern. Divisions of the frond pinnate; the segments oblong, acute, with distinct teeth, separated by deep indentations. The teeth are again denticulate, and the lower ones somewhat obtuse. Fructification with reniform or lunulate involucre, at first resembling lines, as in *Asplenium*, afterwards extending over the whole under surface of the frond, giving it a brownish appearance.—Moist woods.

449. ONOCLEA.

ONOCLEA SENSIBILIS. L. *Sensitive Fern.*

Barren fronds pinnate; segments cut, the upper ones united; fertile fronds doubly pinnate, with recurved, globular subdivisions.

A great difference, in appearance, exists between the barren and fertile fronds of this plant. The barren frond is composed of large, broad, oblong, sinuated leaves or divisions, the lower ones distinct, the upper ones connected by their base. The fertile frond is much narrower, its divisions short, its segments nearly globular, enclosing the fruit, and forming a sort of raceme.—Low grounds.—Perennial.

450. STRUTHIOPTERIS.

STRUTHIOPTERIS PENNSYLVANICA. *Willd.* *Ostrich Fern.*

Barren fronds twice pinnate ; segments entire, obtuse, the lowest elongated, acute.

Syn. *ONOCLEA NODULOSA.* *Schkuhr.*

One of our largest native ferns. Stipe of the barren frond remarkably channelled or hollowed out in front. Divisions of the frond pinnatifid, the segments curved forward and subacute, those next the stipe curved backward, falcate and acute. Fertile frond a sixth part as large, composed of a multitude of dense, turgid, brownish segments, the edges recurved, and the back covered with fruit.—Low grounds, Hanover, New Hampshire.

451. ASPLENIUM.

ASPLENIUM RHIZOPHYLLUM. *L.* *Walking Leaf.*

Frond lanceolate, stipitate, subcrenate, auriculate-cordate at base, the point very long, linear, rooting.

A curious fern, striking root at the extremity of the frond, from which root new plants arise.—In rocky woods in the western parts of the state.

ASPLENIUM TRICHOMANES. *Mx.* *Dwarf Spleenwort.*

Frond pinnate ; divisions roundish, crenate, wedge shaped at base.

Syn. *ASPLENIUM MELANOCAULON.* *Muhl.*

An extremely small and delicate fern. Frond pinnate. Stipe smooth, of a shining black colour. Divisions or leaflets sessile, nearly round, crenate upon their outer edge, entire and acute at base. Fructification in about five or six linear, diverging

dots, which become roundish when old.—Found among high, shady rocks in Roxbury.—Perennial.

On comparison of the European with the American plant I do not find any specific difference.

ASPLENIUM EBENEUM. *Ait.* *Ebony Spleenwort.*

Fronde pinnate; divisions lanceolate, somewhat falcate, serrate, auricled at base; stem quite smooth.

Syn. ASPLENIUM TRICHOMANOIDES. *Mich.*

Considerably larger than the last. Stipe slender, of a smooth, polished, jet black. Divisions or leaflets sessile, oblong, tapering to a point, sometimes a little curved, somewhat serrate, furnished with an acute lobe on each side at base, which gives them a sort of hastate form. Fructification in short, diverging lines, arranged in a double row on the back of the divisions.—Dry woods and hills.—Perennial.

ASPLENIUM THELYPTEROIDES. *Mich.* *Silvery Spleenwort.*

Fronde pinnate; divisions pinnatifid; segments oval, round-obtuse, slightly denticulate; fructification in short, equal, oblique, parallel lines. *Mich. abr.*

This most beautiful fern grows to a pretty large size. Stipe smooth, pale. The divisions of the frond are long and pinnatifid. Segments oblong, close, even, parallel, rounded at the end and nearly entire. Fructification in two rows of short, oblique, close, parallel lines, the opposite pairs forming nearly a right angle. The involucres, when young, have a bright, silvery appearance.—Found by a brook in Roxbury.—Perennial.

ASPLENIUM RUTA MURARIA. *L.* *Dwarf Spleenwort.*

Fronde twice pinnate at base, simply pinnate at top; segments rhomboid-wedge shaped, obtusely denticulate.

A very small spreading fern found on dry rocks and hills in the western parts of the state.

ASPLENIUM ANGUSTIFOLIUM. *Willd.* *Swamp Spleenwort.*

Fronde pinnate, the divisions alternate, upper ones

opposite, linear-lanceolate, somewhat repand, their base truncated on the upper, and rounded on the lower side.

About a foot high with broad, entire leaflets, with the fructification diverging like veins from the midrib.—Swamps and low woods.

452. PTERIS.

PTERIS AQUILINA. *L.*

Common Brake.

Fronde more than decompose; divisions pinnate; segments oblong-lanceolate, the lower ones pinnatifid, upper ones entire and smaller.

Very common in woods, and about the borders of fields and pastures. Stipe erect, smooth, dividing by large, opposite branches, which are again subdivided. Segments or leaflets sessile, oblong, tapering to an obtuse point, the lower ones largest, their edge divided into large, obtuse teeth, by a sort of serpentine line; upper ones entire, obtuse. The fructification grows in a continued, narrow line at the edges of the frond, and is covered by its reflexed margin.—Perennial.

453. WOODWARDIA.

WOODWARDIA ONOCLEOIDES. *Willd.* *Simple Woodwardia.*

Barren fronds pinnatifid, the segments lanceolate, repand, slightly serrulate; fertile fronds pinnate; segments linear, entire, acute.

Syn. ONOCLEA NODULOSA. Mx.

About a foot high. Stipe smooth or slightly paleaceous. Barren frond composed of oblong-lanceolate segments connected at base, the lower ones often distinct, the edges minutely but sharply serrulate. Barren fronds about the same length with linear divisions, revolute at the edge, bearing the fruit in oblong masses on the back, parallel to the middle rib.—Wet swamps.—Perennial.

WOODWARDIA VIRGINICA. *Willd.* *Virginian Woodwardia.*

Fronde pinnate; the divisions pinnatifid; fructification in interrupted lines near the midrib of the divisions and segments. *Mx. sub. syn.*

Syn. *WOODWARDIA BANISTERIANA.* *Mr.*

About two feet high. Segments obtuse, oblong, nearly entire, the edges not more revolute than in other ferns.—Tewksbury. Mr. Greene.

454. ADIANTUM.

ADIANTUM PEDATUM. *L.* *Maidenhair. Mowhair.*

Fronde pedate; divisions pinnate; segments rhomboid-oblong, somewhat lunate, cut-lobed.

Few vegetables possess a greater delicacy of structure than is exhibited by the glossy stems, and fine, regular leaves of the Maidenhair. The stipe, which is of a shining, jet black, divides by a large fork into two principal branches, each of which gives off several successive branches from its upper side; so that the whole frond has the appearance of a pedate leaf without its middle division. The segments or leaflets are alternate, oblong, entire on the lower edge, cut and toothed on the upper. The fruit grows in semicircular points at the margin of the leaf, covered by the folding back of its edge.—Found in moist, rocky woods.—Perennial.

455. DICKSONIA.

DICKSONIA PILOSIUSCULA. *Willd.* *Small fruited Dicksonia.*

Fronde twice pinnate; divisions pinnatifid; segments toothed; stipe somewhat hairy.

Syn. *NEPHRODIUM PUNCTILOBULUM.* *Mich.*

A pretty large, thin, and very delicate fern. The common stalk is smooth, with the exception of a few fine, short hairs, which also invest its divisions. The divisions of the frond are pinnate or pinnatifid, the segments decurrent, oval-oblong, deeply cut or pinnatifid, the partial segments again toothed upon their edge. Dots of fructification minute, near the margin.—Road sides and pastures.—Perennial.



GLOSSARY

OF

BOTANICAL TERMS.

NOTE.—The figures in the American Medical Botany, by the author, are occasionally referred to for farther illustration of the terms.

- Abortive.* Producing no fruit.
- Abrupt.* Terminating suddenly, as if cut off; as in the root of *Sanguinaria Canadensis*. Med. Bot. Pl. 7.
- Abruptly pinnate.* Pinnate with even pairs only. Wanting the odd or terminal leaflet.
- Accrose.* Stiff, linear and sharp, as in the leaves of the Pines.
- Acicular.* Needle shaped.
- Acinaciform.* Shaped like a scimeter. Linear, crooked and sharp edged.
- Acinus.* One of the protuberances which make up a compound berry, as in *Rubus villosus*. Med. Bot. Pl. 38.
- Acotyledonous.* Having no cotyledons or seed lobes; as ferns.
- Aculeate.* Prickly.
- Aculeus.* A prickle, growing to the bark, not to the wood.
- Acuminate.* Ending in a long, produced, sharp point. More than acute; as in the leaves of *Gillenia trifoliata*. Med. Bot. Pl. 41.
- Acute.* Ending in a sharp point. Less than acuminate; as in the leaves of *Phytolacca decandria*. Med. Bot. Pl. 3.
- Adnate.* Growing to. Affixed laterally.
- Agglomerated.* Bunched. Crowded together.
- Aggregate.* Standing together, many on the same receptacle, but not compound.
- Aigrette.* The downy or feathery appendage of certain seeds. Same as Pappus.
- Alated.* See Winged.
- Albumen.* A tough, hard or fleshy substance which forms the bulk of certain monocotyledonous seeds.
- Albuminous.* Partaking the nature of albumen.
- Alga.* An order of the class Cryptogamia, containing the sea weeds, &c.
- Alternate.* Placed alternately on opposite sides of the stem.
- Alveolate.* With cells like those of a honey comb.
- Ament,* or Catkin. A collection of small scales, serving for calyxes, on the side of a slender stalk; as in *Juglans cinerea*. Med. Bot. Pl. 32.
- Amplexicaul.* See Claspings.
- Ancipital.* Two edged.
- Androgynous.* Having barren and fertile flowers on the same spike, or the same plant, but no perfect ones.
- Anisate.* Having the odour of *anise*.
- Annual.* Living but one year, during which it produces flowers and seed.

- Anther.* That part of a stamen which contains the pollen.
Antheroid. Resembling anthers.
Apetalous. Without petals.
Apex. End, tip, or sharp extremity.
Aphyllous. Without leaves.
Appendiculate. Having some appendage.
Appressed. Pressed against or close to.
Apterous. Without wings; as in the radical flowers of *Polygala rubella*.
 Med. Bot. Pl. 54.
Arachnoid. Resembling a spider's web.
Arboreous. Like a tree.
Arborescent. Approaching to the size of a tree.
Aril. An outer covering of certain seeds, which is deciduous or separates;
 as in *Geranium maculatum*. Med. Bot. Pl. 8.
Aristate. Awned. Ending in a bristle.
Armed. Furnished with thorns or prickles.
Aroma. The aromatic quality of plants.
Arrow shaped. Like the head of an arrow.
Articulated. Jointed.
Arundinaceous. Resembling reeds, or stiff large grass.
Ascending. Rising from the ground obliquely.
Attenuated. Gradually diminished or tapering.
Auriculate. Furnished with lateral projections, or leaflets resembling ears,
 at base; as in the leaves of *Solanum dulcamara*. Med. Bot. Pl. 18.
Aw. A stiff bristle, frequently rough or bearded; as in the flowers of cer-
 tain grasses, and in the anthers of *Gaultheria procumbens*. Med. Bot.
 Pl. 22.
Awned. Having awns.
Awnless. Without awns.
Axil. The angle between a leaf and stem on the upper side.
Axillary. Growing in or from the axil.

B

- Banner.* The upper and commonly largest petal of a papilionaceous flower.
Barren. Producing no fruit. Containing stamens only; as in the barren
 flowers of *Rhus vernix*. Med. Bot. Pl. 10.
Bell shaped. Rounded and hollow at base, without a tube; as in the corolla
 of *Apocynum androsaemifolium*. Med. Bot. Pl. 36.
Berry. A juicy fruit with the seeds imbedded in the pulp, without any inter-
 mediate covering; as in *Phytolacca decandra*. Med. Bot. Pl. 3.
Bicuspidate. With two points.
Biennial. Living two years, in the second of which the flower and fruit
 are produced; as in *Conium maculatum*. Med. Bot. Pl. 11.
Bifid. Two cleft. Cut nearly into two parts.
Biglandular. Having two glands.
Bilocular. Having two cells.
Bipinnate. Twice pinnate. When both the leaf and its subdivisions are
 pinnate.
Bipinnatifid. Twice pinnatifid. Both the leaf and its segments being pin-
 natifid.
Biternate. Twice ternate. The petiole supporting three ternate leaves.
Bivalve. Two valved.
Bloom. A superficial colouring substance which easily rubs off; apparently
 a fine powder.
Border. The brim, or spreading part of a corolla.
Brachiate. Branches opposite, and each pair at right angles with the pre-
 ceding.
Bractè, or Floral leaf. A leaf near the flower which is different from the
 other leaves of the plant.

Bulb. A solid, coated or scaly part of a plant, capable of continuing its existence; usually found at the root, but sometimes on the stem.

Bulbous. Formed of a bulb.

C

Caducous. Falling early; sooner than deciduous.

Cæspitose. Forming turfs.

Calcarate. Resembling, or furnished with, a spur.

Calyxiform. Shaped like a calyx.

Calyculated. Furnished with an additional outer calyx.

Calyx. The lowest portion of a flower, or that which forms its outer covering in the bud; usually of a green colour.

Campanulate. Bell shaped; which see.

Canescent. Whitish. Hoary.

Capillary. Hair like.

Capitate. Shaped like a head; or bearing a head.

Capsule. A hollow seed vessel which opens and becomes dry, when ripe.

Carinated. Keeled. Furnished with a sharp or prominent back like the keel of a vessel.

Carnose. Fleshy in consistence.

Culkin. See Ament.

Caudate. Having a tail.

Caulis. The upper part of a root, which gives rise to the stem

Caulescent. Having a true stem, or *caulis*.

Cauline. Growing on the stem.

Cell. A cavity or compartment of a seed vessel or anther.

Cellular. Made up of little cells or cavities.

Cespitose. See Cæspitose.

Chaffy. Made of short membranous portions like chaff.

Ciliate. Fringed with parallel hairs.

Cinereous. Ash coloured.

Cirrose. Bearing a tendril.

Clasping. Surrounding the stem partly or quite, with the base of the leaf

Clavate. Club shaped. Larger at top than bottom.

Claw. The narrow part by which a petal is inserted or attached.

Cleft. Split or divided less than half way.

Club shaped. Larger at top than bottom.

Coadmate. United at base.

Coloured. Different from green which is the common colour of plants.

Column. The central pillar of a capsule. Also the style of gynandrous plants.

Compound. Made up of similar simple parts.

Compound flower. A flower of the class Syngnesia, consisting of florets with united anthers.

Compressed. Flattened.

Conc. A scaly fruit like that of the pine. See Strobilus.

Conglomerate. Crowded together.

Concate. Opposite with the bases united or growing into one; as in *Triopteris perfoliatum*. Med. Bot. Pl. 9.

Concurrent. Converging. The tips inclining towards each other.

Contorted. Twisted. Bent from a common position.

Coreulum. The embryo or miniature of the future plant which is found in seeds, often between the cotyledons.

Cordate. Heart shaped, with the stalk inserted in the largest end.

Coriaceous. Resembling leather. Tough and thick.

Cornicous. Horny. Having a consistence like horn.

Corniculate. Horn shaped.

Corolla. The secondary covering of a flower, being the part which is usually coloured. When the calyx is wanting the corolla is then the primary covering.

- Cortical.* Belonging to the bark.
- Corymb.* A mode of inflorescence in which the flowers form a flat top, while their stalks spring from different heights on the common stem; as in *Eupatorium perfoliatum*. Med. Bot. Pl. 2.
- Costate.* Ribbed.
- Cotyledons.* Seed lobes. The fleshy part of seeds which in most plants rises out of ground and forms the first leaves.
- Creeping.* Running horizontally or close to the surface of the ground. Examples of a creeping root are found in *Coptis trifolia*. Med. Bot. Pl. 5. And of a creeping stem in *Gaulltheria procumbens*. Pl. 22.
- Crenate.* Scalloped. Having sharp notches on the edge separated by round or obtuse dentures; as in the leaves of *Coptis trifolia*. Med. Bot. Pl. 5.
- Crenulate.* Finely or minutely crenate.
- Crowned.* Having a circle of projections round the upper part of the tube of a flower, on its inside.
- Cruciform.* Consisting of four petals placed like a cross.
- Cryplogamous.* Belonging to the Class Crypogamia, the last of the Linnæan arrangement, in which neither stamens nor pistils are visible.
- Cucullate.* Hooded or cowlled. Rolled or folded in; as in the spathe of *Arum triphyllum*. Med. Bot. Pl. 4.
- Cucurbitaceous.* Like gourds or melons.
- Culm, or straw.* The stem of grasses, reeds and similar plants.
- Cuneiform.* Shaped like a wedge, with the stalk attached to its point.
- Cuspidate.* Having a sharp, straight point.
- Culicle.* The outside skin of a plant, commonly thin.
- Cyathiform.* Shaped like a common wine glass.
- Cylindrical.* Round and not tapering. Cylinder shaped.
- Cyme.* A mode of inflorescence in which the flower stalks arise from a common centre, but are afterwards variously subdivided; as in *Elder* and *Viburnum*.
- Cymose.* Bearing or flowering in cymes.

D

- Decagynous.* Having ten styles.
- Decandrous.* Having ten stamens.
- Deciduous.* Falling off. In opposition to persistent and evergreen. Later than *caducous*.
- Declined, or declinate.* Tending downwards; as the stamens and style of *Rhododendron maximum*. Med. Bot. Pl. 51.
- Decomposed.* Twice compound. Composed of compound parts.
- Decumbent.* Leaning upon the ground, the base only erect.
- Decurrent.* When the edges of a leaf run down the stem or stalk.
- Decursive.* See Decurrent.
- Decussated, or Decussating.* In pairs crossing each other.
- Deflected.* Bent off.
- Deltiscent.* Gaping or cracking open.
- Deltoid.* Nearly triangular. Leaves of this form approach in shape to an isosceles triangle with the base projecting where the petiole is inserted.
- Dentate.* Toothed. Edged with sharp projections separated by notches. Larger than *serrate*.
- Denticulate.* Minutely toothed.
- Dentures.* Teeth. The sharp parts which separate notches.
- Depauperated.* Few flowered.
- Depressed.* Flattened or pressed in at top.
- Diadelphous.* Having the stamens united in two parcels or sets. Flowers of this kind have commonly a papilionaceous corolla and a leguminous fruit.
- Diandrous.* With two stamens.
- Dichotomous.* Forked. Dividing into two equal branches.

- Dicocous.* Containing two grains or seeds.
Dicotyledonous. Having two cotyledons or seed lobes.
Dilymous. Twin.
Didynamous. Belonging to the class Didynamia, with two short and two long stamens and a ringent corolla.
Digitate. When a petiole gives off five or more leaflets from a single point at its extremity; as *Panax quinquefolium*. Med. Bot. Pl. 39.
Digynous. Having two styles.
Dimidiate. Halved.
Dioecious. Having the barren and fertile flowers on different plants.
Disc. The surface or top, in distinction from the edge.
Discoid. Having a disc covered with florets, but no ray.
Dissepiment. The partition or internal wall of a capsule.
Distichous. Growing in two opposite ranks or rows.
Divaricate. Diverging so far as to turn backward.
Divergent. Spreading. Separating widely.
Dodecaedrous. With twelve stamens.
Dorsal. Growing on, or belonging to, the back.
Down. The hairy or feathery appendage of certain seeds. Also a short, soft pubescence.
Drooping. Inclining downward. More than *nodding*.
Drupe. A fleshy fruit inclosing a stone or nut; like the cherry.
Drupaceous. Bearing, or resembling, drupes.

E

- Echinate.* Beset with prickles. Hedgehog like.
Elliptic. Oval; as the leaves of *Magnolia glauca*. Med. Bot. Pl. 27.
Elongated. Exceeding a common or average length.
Emarginate. Having a notch in the end.
Enneandrous. With nine stamens.
Ensiform. Sword shaped, two edged; as the leaves of *Iris versicolor*. Med. Bot. Pl. 16.
Entire. Even and whole at the edge; as the leaves of *Rhus vernix*. Med. Bot. Pl. 10.
Ephemeral. Lasting but a day.
Epidermis. See Cuticle
Eroded. Appearing as if gnawed at the edge.
Esulent. Eatable.
Evergreen. Remaining fresh through the winter. Not deciduous.
Eserted. Projecting or extending out of the flower or sheath.

F

- Falcate.* Sickle shaped. Linear and crooked.
Farina. The pollen. Also meal or flour.
Farinaceous. Mealy.
Fascicle. A bundle.
Fascicled, or *fasciculate.* Collected in bundles.
Fastigiata. Flat topped.
Favose. Resembling a honey comb.
Ferns. An order of cryptogamous plants bearing the fructification commonly on the back of the leaf, or in spikes, made up of minute capsules opening transversely.
Fertile. Containing perfect pistils and yielding fruit.
Filiform. Thread like, or very slender.
Fimbriate. Finely divided at the edge like fringe.
Fistulous. Hollow or tubular.
Flabelliform. Spreading like a fan.
Flagelliform. Like a whip lash.
Flexuous. Serpentine or zigzag.
Floral leaf. See Bracte.

- Floret.* A little flower. One in an aggregate or compound flower.
Floscular. A floret in a compound flower which is tubular, not ligulate.
Follicle. A seed vessel which opens lengthwise or on one side only; as in *Apocynum androsaemifolium*. Med. Bot. Pl. 36.
Fron. The leaf of cryptogamous plants.
Fruetification. The flower and fruit with their parts.
Frulescent. Becoming shrubby.
Fruticose. Shrubby.
Fungi. The order of cryptogamous plants to which the mushrooms belong.
Fungous. Growing rapidly and preternaturally, with a soft texture like the *fungi*.
Funnel shaped. Tubular at bottom and gradually expanding at top; as the flowers of *Datura Stramonium*. Med. Bot. Pl. 1.
Furfuraceous. Resembling bran.
Fusiform. Spindle shaped. When a root is large at top and tapers downward, as in the *carrot* and *radish*.

G

- Galls.* Excrescences caused by the bite of an insect.
Gemmaceous. Belonging to a bud. Made of the scales of a bud.
Generic. Belonging to a genus.
Geniculate. Bent like a knee.
Genus. A family of plants agreeing in their flower and fruit.
Germ. The lower part of the pistil, which afterwards becomes the fruit.
Germination. The sprouting of a seed.
Gibbous. Swelled out, commonly on one side.
Glabrous. Smooth, as it regards hairiness or pubescence.
Gland. A small roundish appendage, apparently performing some function of secretion or excretion.
Glandular pubescence. Hairs tipped with little heads or glands.
Glaucous. Sea green. Pale blueish green.
Glume. The scales, valves or chaff, which make the calyx and corolla of *grasses*.
Glutinous. Adhesive, viscid, covered with an adhesive fluid.
Gramina. Grasses and grass like plants.
Gramineous. Resembling grasses.
Granular. Formed of grains, or covered with grains.
Gymnospermous. Having naked seeds.
Gynandrous. Having the stamens growing on the pistils.

H

- Habit.* The general external appearance of a plant, by which it is known at sight.
Halberd shaped. See *Hastate*.
Hastate. Shaped like a halberd. It differs from *arrow shaped* in having the barbs or lateral portions more distinct and divergent.
Head. A dense, round collection of flowers, which are nearly sessile.
Helmet. The concave upper lip of a labiate flower.
Heptandrous. Having seven stamens.
Herb. All that portion of a plant which is not included in the root or fructification; as the stem, leaves, &c.
Herbaceous. Not woody.
Hermaphrodite. See *Perfect*.
Hexandrous. With six stamens.
Hilum. The scar or mark on a seed, where it was attached to the plant or seed vessel.
Hirsute. Rough with hairs.
Hispid. Bristly. More than hirsute.
Hooded. See *Cucullate*.
Horn. See *Spur*.

Hybrid. A mongrel or intermediate species between two others, from which it is descended.

Hypocrateriform. Salver shaped. With a tube abruptly expanded into a flat border.

I

Icosandrous. Having about twenty stamens growing on the calyx and not on the receptacle. Belonging to the class leosandria.

Imbricate. Lying over each other like scales, or the shingles of a roof.

Included. Wholly received or contained in a cavity. The opposite of *exserted*.

Incrassated. Thickened upward. Larger toward the end.

Incumbent. Lying against or across.

Indigenous. Native. Growing originally in a country.

Indusium. Plural Indusia. The involucre or veil which covers the fruit of ferns.

Inferior. Lowermost. Used to express the relative situation of the calyx and germ. An inferior flower is one in which the calyx and corolla are below the germ.

Inflated. Tumid and hollow. Blown up like a bladder.

Inflorescence. The manner in which the flowers are situated or connected with the plant, and with each other.

Infundibuliform. Funnel shaped, which see.

Inserted into. Growing out of.

Internode. The space between joints.

Interruptionally pinnate. When smaller leaflets are interposed among the principal ones.

Involucre, or Involucrum. A sort of general calyx serving for many flowers; generally situated at the base of an umbel, or head; as in *Cotium maculatum*. Med. Bot. Pl. 11, and *Cornus florida*, Pl. 28. Also the Indusium.

Involucel. A partial involucre.

Irregular corolla. Having its upper and lower sides unlike.

K

Keel. The under petal of a papilionaceous flower. Also the lower side of the midrib of a leaf.

Keeled. Shaped like a keel.

Kernel. The nucleus or seed of a nut.

Kidney-shaped. Heart-shaped without the point, and broader than long.

L

Labiate. Having an upper and lower lip, as in flowers of the class Didynamia.

Laciniate. Cut, torn and jagged.

Lactescent. Yielding a white, or milky juice, when wounded.

Lamellated. In thin plates.

Lamina. The border or flat end of a petal, in distinction from its claw. Also a thin layer, plate or membrane of any kind.

Lanceolate. Spear shaped. Narrow, with both ends acute, as in the leaves of *Erythronium Americanum*. Med. Bot. Pl. 58.

Lanuginous. Woolly.

Lateral. At the side.

Leaflet. A partial leaf. A constituent of a compound leaf.

Legume. A pod or seed vessel having its seeds attached to one side or suture; commonly of a long form and not jointed.

Leguminous. Bearing legumes.

Liber. The inner bark.

Lignous. Woody.

Ligulate. Ribbon shaped. A kind of corolla found in compound flowers, consisting of a tube at bottom, continued into a long flat portion at top; as in the florets of the Dandelion.

Liliaceous. Resembling the lily.

Limb. The border or spreading part of a monopetalous corolla.

- Linear.* Long and very narrow with parallel sides ; as the leaves of grasses.
Lip. The upper or under side of the mouth of a labiate corolla, or nectary.
 In Orchideous plants the lower lip of the nectary is usually the most conspicuous part of the flower.
Lobe. A large division or distinct portion of a leaf or petal.
Lobel. Divided into lobes ; as the leaves of *Laurus sassafras*. Med. Bot. Pl. 35.
Loment. A pod resembling a legume, but divided by transverse partitions.
Lyrate. Pinnatifid with a large roundish leaflet at the end.

M

- Marescent.* Withering.
Maritime. Growing near the salt water.
Medulla. The pith.
Membranous. Very thin and delicate.
Midrib. The large central vein of a leaf which is a continuation of the petiole.
Monadelphous. Having the stamens united into a tube at base.
Monandrous. Having one stamen.
Mouiliform. Arranged like the beads of a necklace.
Monœcious. Having barren and fertile flowers on the same plant.
Monogynous. With one style.
Monopetalous. Having but one petal, i. e. the corolla of one piece.
Monophyllous. Consisting of one leaf, or piece.
Mosses. The second order of the class Cryptogamia. Small plants with lids on the capsules.
Mucronate. Having a small point projecting from an obtuse end.
Multipartite. Many parted.
Muricate. Covered with sharp spines or prickles.
Musci. See *Mosses*.

N

- Nectariferous.* Bearing honey.
Nectary. The part of the flower which produces honey. The term is also applied in certain instances to any internal, supernumerary part of the calyx or corolla.
Nerves. Parallel veins.
Nerved. Marked with nerves.
Nodding. Inclining to one side. Partly drooping.
Nucleus. The kernel or seed of a nut.
Nut. A seed inclosed in a hard shell.

O

- Ob.* A particle, which when prefixed to any other term, denotes the inversion of the usual position ; as obovate, obcordate, &c., i. e., inversely ovate, inversely cordate, &c.
Obconic. Conic with the apex downward.
Obcordate. Heart shaped with the point inward, or downward.
Oblong. Longer than oval with the sides parallel.
Obovate. Ovate, but inverted.
Obsolete. Indistinct. Appearing as if worn out.
Obtuse. Blunt, rounded, not acute.
Ochroleucous. Whitish yellow.
Octandrous. With eight stamens.
Official. Kept for sale as medicinal.
Opaque. Not transparent.
Operculum. The lid which covers the capsules of mosses.
Opposite. Standing directly against each other on opposite sides of the stem : as the leaves of *Spigelia Marilandica*. Med. Bot. Pl. 14.
Orbicular. Circular.

Orchideous plants. A natural order of plants in the class Gynandria, having irregular flowers, a remarkable lip, and glutinous pollen. Related to the genus *Orchis*.

Oval. Elliptical; as the leaves of *Magnolia glauca*. Med. Bot. Pl. 27.

Ovate. Egg shaped. Oval with the lower end largest; as the leaves of *Sabalia angularis*. Med. Bot. Pl. 57.

P

Palate. A large obtuse projection which closes the throat of a personate flower.

Palaeccus. Chaffy.

Palmate. Hand shaped. Deeply divided into spreading and somewhat equal segments; as the leaves of *Podophyllum peltatum*. Med. Bot. Pl. 23.

Panduriform. Contracted in the middle like a violin.

Panicle. A loose, irregular bunch of flowers, with subdivided branches; as in *Statice Caroliniana*. Med. Bot. Pl. 25.

Papilionaceous. Having an irregular corolla like the pea blossom; consisting of four petals, of which the uppermost is called the *banner*; the two lateral ones *wings*; and the lower one, which is commonly boat shaped, the *keel*. Mostly belonging to the class Diadelphia.

Pappus. The down of seeds. A feathery appendage.

Parasitic. Growing on another plant and drawing nourishment from it.

Parenchyma. The cellular substance of vegetables.

Partial. This term is applied to small or constituent parts in distinction from general.

Partition. The dividing wall in seed vessels.

Parted. Deeply divided; more than cleft.

Pectinate. Like the teeth of a comb. Intermediate between fimbriate and pinnatifid

Pedate. Having central segment or leaf which is simple, and two lateral ones which are compound.

Pedicel. The ultimate branch of a peduncle. A little stalk.

Peduncle. A stem bearing flowers or fruit, which is the branch of another stem.

Pellicle. A very thin stratum or coat.

Peltate. Having the stalk attached to some part of the surface or disc, and not to the margin.

Pendulous. Hanging down.

Pencilled. Ending like a painter's pencil or brush.

Pentandrous. Having five stamens.

Perennial. Lasting more than two years.

Perfect flower. One which possesses stamens and pistils, and produces fruit.

Perfoliate. Surrounding the stem on all sides and perforated by it. It differs from connate, in not consisting of two leaves.

Perianth. A sort of calyx which is immediately contiguous to the other parts of fructification.

Pericarp. A seed vessel, or whatever contains the seed.

Permanent. See *Persistent*.

Persistent. Not falling off. Those parts of a flower are persistent which remain till the fruit is ripe.

Persnate. Masked. Having the mouth of the corolla closed by a prominent palate.

Petal. The leaf of a corolla, usually coloured.

Petaloid. Resembling petals.

Petiole. The stalk which supports a leaf.

Phenogamous. Not Cryptogamous. Applied to all plants which have visible stamens and pistils.

Pilose. Hairy. With a stiff pubescence.

Pinnæ. The leaflets or divisions of a pinnate leaf.

Pinnate. A leaf is pinnate when the leaflets are arranged in two rows on the sides of a common petiole; as in *Rhus vernix*. Med. Bot. Pl. 10.

- Pinnatifid.* Cut in a pinnate manner. It differs from pinnate in consisting of a simple or continuous leaf, not compound.
- Pistil.* A constituent part of a flower including the germ, style, and stigma. In a regular flower it forms the central part.
- Pistillate.* Having pistils, but no stamens.
- Plaited.* Folded like a ruffie or fan; as the leaves of *Veratrum viride*. Med. Bot. Pl. 33.
- Plumose.* Feathery. Feather like.
- Plumula.* Part of the coreulum of a seed, which afterwards forms a new plant with the exception of the root.
- Pod.* A dry seed vessel, not pulpy; most commonly applied to legumes and siliques.
- Pointal.* See *pistil*.
- Polyadelphous.* Belonging to the class Polyadelphia, in which the stamens are united into several paeels.
- Polyandrous.* Having many disconnected stamens inserted into the receptacle.
- Polycotyledonous.* Having seeds with more than two cotyledons.
- Polygamous.* Having some flowers which are perfect, and others which have stamens only, or pistils only.
- Polygynous.* Having many styles.
- Polymorphous.* Changeable. Assuming a variety of forms.
- Polypetalous.* Having many petals.
- Polyphyllous.* Having many leaves.
- Pome.* A pulpy fruit having a capsule within it; as the apple.
- Præmorse.* Bitten off. The same as *abrupt*.
- Prickle.* The prickle differs from the thorn in being fixed to the bark only and not to the wood.
- Prismatic.* Having several parallel, flat sides.
- Procumbent.* Lying on the ground.
- Proliferous.* An umbel or flower is said to be proliferous when it has smaller ones growing out of it.
- Pseudopinnate.* Falsely or imperfectly pinnate.
- Pubescent.* Hairy or downy.
- Pulp.* The soft, juicy, cellular substance found in berries and similar fruits.
- Pulpy.* Filled with pulp.
- Pulverulent.* Dusty. Composed of powder, or appearing as if covered with it.
- Punctate.* Appearing as if pricked full of small holes, or dots.
- Punctiform.* Resembling dots.
- Pungent.* Sharp, acrid, pricking.
- Putamen.* A hard shell.

Q

- Quaternate.* Four together.
- Quinate.* Five together.

R

- Raceme.* A cluster; a kind of inflorescence in which the flowers are arranged by simple pedicels on the sides of a common peduncle.
- Rachis.* The common stalk to which the florets and spikelets of grasses are attached. Also the midrib of some leaves and fronds.
- Radiate.* Having ligulate florets placed like rays at the circumference, as in certain compound flowers; or having the outer petals largest, as in certain cymes and umbels.
- Radical.* Growing immediately from the root.
- Radicle.* The part of the coreulum which afterwards forms the root. Also the minute branch of a root.
- Ray.* The diverging florets or petals which form the outside of radiate flowers, cymes and umbels.
- Receptacle.* The end of a flower stalk, being the base to which most or all the parts of fructification are attached.

- Reclined, or Reclining.* Bending over, with the end inclining toward the ground.
- Recurved.* Curved backwards.
- Reflexed.* Bent backward, more than recurved.
- Reniform.* Kidney shaped. Heart shaped without the point.
- Repand.* Slightly wavy or serpentine at the edge; as the leaves of *Menyanthes trifoliata*. Med. Bot. Pl. 46.
- Resupinate.* Turned upside down; as the leaves of *Juniperus communis*. Med. Bot. Pl. 44.
- Reticulate.* Net like. Having veins distributed like net work.
- Retuse.* Having a slight sinus, or superficial notch in the end. Less than emarginate.
- Revolute.* Rolled backward or outward.
- Rhomboidal.* Having four sides, with unequal angles.
- Ribbed.* Marked with parallel ridges or veins.
- Ringent.* Irregular, with an upper and under lip. See *labiate*.
- Rooting.* Sending out lateral roots.
- Rostellum.* See radicle.
- Rostrate.* Furnished with a beak.
- Rotate.* Wheel shaped. Flat without a tube; as in the flowers of *Solanum dulcamara*. Med. Bot. Pl. 18.
- Rugose.* Wrinkled.
- Runcinate.* Having large teeth pointing backward; as the leaves of the *dandelion*.

S

- Sagittate.* Arrow shaped. Like the head of an arrow.
- Salver shaped.* See *Hypocrateriform*.
- Samara.* A seed vessel not opening by valves, having a winged or membranous appendage.
- Sarmentose.* Running on the ground and striking roots from the joints, as the *strawberry*.
- Scape.* A stalk which springs from the root, and supports flowers and fruit, but no leaves.
- Scabrous.* Rough.
- Scarious.* Having a thin membranous margin.
- Scions.* Lateral shoots or offsets from the root.
- Scrobiculate.* Covered with deep, round pits.
- Seed vessel.* A vessel enclosing the seed.
- Segment.* A part or principal division of a leaf, calyx or corolla.
- Semibivalvular.* Half divided into two valves.
- Seminal leaves.* The first leaves of a plant, or those formed from the cotyledons.
- Sericeous.* Silky.
- Serrate.* Notched like the teeth of a saw, the points tending upward; as in *strawberry* and *rose* leaves.
- Serrulate.* Minutely serrate.
- sessile.* Placed immediately on the stem, without the intervention of a stalk; as the leaves of *Spigelia Marilandica*. Med. Bot. Pl. 14.
- Setaceous.* Bristle like.
- Sheath.* A tubular or folded leafy portion inclosing the stem.
- Silicle.* A seed vessel constructed like a silique, but not longer than it is broad.
- Silique.* A long pod or seed vessel of two valves, having its seeds attached to the two edges alternately.
- Siliquose.* Having siliques.
- Simple.* Not divided, branched, or compounded.
- Sinuate.* Having sinuses at the edge.
- Sinus.* A large, rounded indentation or cavity.
- Sori.* Plural of *Sorus*. The most common fruit of ferns, consisting of small clusters of minute capsules on the back of the leaf.

- Spadix.* An elongated receptacle of flowers, commonly proceeding from a spathe; as in *Arum triphyllum*. Med. Bot. Pl. 4.
- Spathe.* A sheathing calyx opening lengthwise on one side, and consisting of one or more valves. See Spadix.
- Spatulate, or spatulate.* Obtuse or large at the end, and gradually tapering into a stalk at base; as in the leaves of *Statice Caroliniana*. Med. Bot. Pl. 25.
- Species.* A group or subdivision of plants agreeing with each other not only in their fructification, but in all other essential and permanent parts; and always reproducing the same kind.
- Specific.* Belonging to a species only.
- Spike.* A kind of inflorescence in which the flowers are sessile or nearly so on the sides of a long peduncle.
- Spikulet.* A small spike.
- Spindle shaped.* See Fusiform.
- Spine.* A thorn, or sharp process growing from the wood.
- Spir.* A sharp hollow projection from a flower, commonly the nectary.
- Squamiform.* Scale shaped.
- Squarrose or squarous.* Ragged. Having reflected or divergent scales.
- Stamen.* The part of the flower on which the Linnaean classes are founded. It commonly consists of the *filament* or stalk, and the *anther* which contains the pollen.
- Staminate.* Having stamens, but no pistils.
- Standard.* See Banner.
- Stellate.* Like a star.
- Stem.* A general supporter of leaves, flowers and fruit.
- Stemless.* Having no stem properly so called, but only a scape.
- Sterile.* Barren.
- Stigma.* The summit or extremity of the pistil.
- Stipe.* The stem of a fern or fungus; also the stem of the down of seeds; also a particular stalk of germs, seeds &c., which is superadded to the pedicel; as in *Coptis trifolia*. Med. Bot. Pl. 5.
- Stipitate.* Supported by a stipe.
- Stipule.* A leafy appendage situated at the base of petioles or leaves.
- Stipular.* Belonging to stipules.
- Stolmiferous.* Having scions or running shoots.
- Striate.* Marked with fine parallel lines.
- Strigose.* Bristly.
- Strobile.* A cone; an ament with woody or rigid scales, as in the fruit of pines, firs, &c.
- Style.* The part of the pistil which is between the germ and stigma.
- Sub.* A particle prefixed to various terms, to imply the existence of a quality in a diminutive or inferior degree, as
- Subacute.* Somewhat acute. Less than acute, &c.
- Subsessile.* Nearly sessile.
- Subserrate.* Slightly serrate &c.
- Subulate.* Awl shaped. Narrow, stiff and sharp pointed.
- Succulent.* Juicy.
- Sucker.* A shoot from the root, or lower part of the stem.
- Suffruticose.* Somewhat shrubby. Shrubby at base.
- Sulcate.* Furrowed.
- Supradecomposed.* More than decomposed. Many times subdivided.
- Suture.* The line or seam formed by the junction of two valves of a seed vessel.

T

- Tendril.* A filiform appendage of certain vines, which supports them by twining round other objects.
- Terele.* Round, cylindrical.
- Terminal.* Extreme, situated at the end.

- Ternate.* Three together ; as the leaves of *Menyanthes trifoliata*. Med. Bot. Pl. 46.
- Tetradynamous.* Having four long and two short stamens.
- Tetrandrous.* Having four stamens.
- Thorn.* See Spine.
- Throat.* The passage into the tube of a corolla.
- Thyrse.* A close, compact panicle.
- Tomentose.* Downy. Covered with fine matted pubescence.
- Triandrous.* With three stamens.
- Trifid.* Three cleft.
- Trifoliate.* Three leaved. See *Ternate*.
- Tribolate.* Three lobed.
- Tritelocular.* Three celled.
- Tripartite.* Three parted.
- Trivial name.* The specific name.
- Truncate.* Having a square termination as if cut off, as the leaves of *Liviodendron tulipifera*. Med. Bot. Pl. 31.
- Tuber.* A solid, fleshy knob.
- Tuberous.* Thick and fleshy, containing tubers ; as the roots of the Potatoe, Peony, &c.
- Tubular.* Shaped like a tube. In a compound flower, the florets which are not ligulate, are called tubular.
- Tunicated.* Coated with concentric layers ; as the Onion.
- Turbinate.* Shaped like a top or pear.

V

- Valves.* The segments or parts of a seed vessel, into which it finally separates. Also the leaves which make up a glume or spathe.
- Variety.* A subdivision of a species, distinguished only by characters which are not permanent ; and which does not with certainty reproduce its kind ; as the varieties of *tulips, peaches, &c.*
- Vaulted.* Arched over ; with a concave covering.
- Veined.* Having the divisions of the petiole irregularly branched on the under side of the leaf.
- Ventricose.* Swelling. Inflated.
- Verrucose.* Warty. Covered with little protuberances.
- Vertical.* Perpendicular.
- Verticillate.* Whorled. Having leaves given off in a circle round the stem.
- Vesicular.* Made of vesicles or little bladders.
- Villous.* Hairy, the hairs long and soft.
- Virgate.* Long and slender. Wand like.
- Virose.* Poisonous, nauseous and strong to the smell.
- Viscid.* Thick, glutinous, covered with adhesive juice.
- Vitellus.* A part of certain seeds distinct from the albumen, but not rising out of the ground at germination.
- Viriparous.* Producing a collateral offspring by means of bulbs.

U

- Umbel.* A kind of inflorescence in which the flower stalks diverge from one centre like rays ; as in *Conium maculatum*. Med. Bot. Pl. 11.
- Umbelliferous.* Bearing umbels.
- Umbilicate.* Marked with a central depression.
- Unarmed.* Without prickles or thorns.
- Uncinate.* Hooked, hook shaped.
- Undulated.* Wavy, serpentine, gently rising and falling.
- Unguiculate.* Inserted by a claw.
- Unilateral.* Growing all on one side, or with the flowers leaning to one side.
- Urceolate.* Pitcher shaped. Swelling in the middle and slightly contracted at top.

W

Wedge shaped. Formed like a wedge, and commonly rounded at the largest end.

Wheel shaped. See *Rotate*.

Wings. The two lateral petals of a papilionaceous flower.

Winged. Having the sides extended into a leafy expansion.

INDEX OF THE GENERA,

WITH ACCENTS.

Acalýpha	362	A'rtetium	290
A'cer	377	Arenària	179
Achillèa	315	Arethùsa	324
Acnida	367	Aristolòchia	328
A'corus	137	Aristìda	31
Actaèa	211	A'rum	347
Adiàntum	395	Artemìsia	299
Agrimònia	139	Arùdo	38
Agròstis	28	A'sarum	187
A'ira	31	Asclèpias	100
Alisma	144	Aspidium	389
A'llium	130	Asplènium	392
A'lnus	342	A'ster	308
Alètris	131	Atràgene	219
Alopecùrus	26	A'triplex	373
Althaèa	259	Avèna	32
Amarànthus	343	Azàlea	82
Ambròsia	343		
Ammànnia	53	B.	
Anagàllis	74	Ballòta	237
Andròmeda	166	Bàrtsia	243
Andropògon	43	Bèrberis	128
Anemòne*	222	Bètula	355
Angèlica	110	Bidens	294
Anthemis	314	Bitum	3
Anthoxànthum	27	Boètia	206
Antirrhinum	243	Bøhmèria	342
Apàrgia	285	Botrychium	386
Apòcynum	99	Brachystemum	237
Aquilègia	219	Briza	36
Aràlia	122	Bròmus	37
A'rabis	251	Bùnias	251
Arbutus	165		

* *Ανεμώνη*. The usual English pronunciation is Anemone.

	C.		Crataegus	194
Calla		348	Crotalaria	267
Callitriche		2	Cucubalus	183
Callha		221	Cunila	10
Campànula		85	Cupressus	361
Cardamine		252	Cuscuta	106
Carex		335	Cymbidium	326
Carpinus		357	Cynoglossum	72
Cassia		171	Cyperus	18
Castanea		349	Cypripedium	327
Ceanothus		91		
Celastrus		92	D.	
Celtis		373	Dactylis	32
Centaurèa		316	Dalibarda	202
Centaurèlla		52	Datura	79
Cephalanthus		51	Dentaria	254
Cerastium		184	Dianthus	179
Chàra		334	Diapensia	83
Chelidonium		210	Dicksònia	395
Chelone		248	Diòscorea	368
Chenopodium		107	Diervilla	89
Chrysanthemum		301	Dirca	149
Chrysosplenium		154	Daucus	109
Cichorium		285	Dracena	135
Cicuta		114	Draba	250
Cinna		29	Dròsera	123
Circèa		11		
Cistus		212	E.	
Claytonia		98	Echium	70
Clématis		219	Elymus	46
Clèome		254	Empetrum	365
Clèthra		172	Epigaea	164
Clinopodium		239	Epilobium	146
Cnicus		290	Epipactis	323
Collinsònia		10	Equisetum	382
Còmarum		203	Erigeron	302
Comptonia		340	Eriocaulon	335
Conium		110	Eriophorum	23
Convallària		132	Erysimum	253
Convòivulus		78	Erythronium	135
Conyza		299	Eupatorium	295
Còptis		221	Euphorbia	189
Corallorhiza		326		
Coreòpsis		315	F.	
Còrnus		57	Fagus	348
Còrydalis		262	Festuca	36
Còrylus		356	Fragaria	202

Fraxinus	380	Iris	15
Fumària	262	Isnàrdia	61
		Iva	317
G.			
Galeòpsis	236		
Gàlium	54	Jùglans	352
Gaulthèria	164	Jùncus	138
Genista	267	Juniperus	371
Gentiàna	105		
Gerànium	256		
Geràrdia	246	Kàlmia	169
Gèum	206	Krìgia	289
Glechòma	234		
Glycine	276		
Gnaphàlium	299		
Gratiòla	7		
H.			
Hamamèlis	61		
Hedýsarum	274		
Heliànthus	315		
Hellèborus	134		
Helònia	141		
Hepàtica	222		
Heraclèum	110		
Heùchera	106		
Hibiscus	259		
Hieràcium	288		
Hòlcus	44		
Hòrdeum	47		
Hottònia	77		
Hudsonia	213		
Hùmulus	367		
Houstonia	53		
Hydrocòtyle	109		
Hydrophýllum	73		
Hydropèltis	222		
Hyoscýamus	81		
Hypèricum	279		
Hypòxis	130		
Hyssòpus	235		
I.			
Ictòdes	59		
Ilex	62		
Impàtiens	93		
Inùla	301		
		J.	
		K.	
		L.	
		Lactuca	286
		Làmium	235
		Làthyrus	268
		Làurus	160
		Lechèa	47
		Lèdum	172
		Leèrsia	30
		Lèmna	334
		Leòntodon	286
		Leonùrus	235
		Leontíce	127
		Lepidium	250
		Leptàndra	6
		Lespedèza	272
		Liàtris	293
		Linnaèa	241
		Ligùsticum	111
		Ligùstrum	5
		Lilium	136
		Linum	123
		Lindèrnia	7
		Liriodèndron	229
		Lithòspermum	71
		Lobèlia	85
		Lòlium	45
		Lonicèra	87
		Ludwigia	60
		Lupinus	267
		Lycopòdium	384
		Lycòpsis	71
		Lycopus	9
		Lygòdium	387
		Lysimàchia	74

Lÿthrum	188	Pastinàca	113
		Pediculàris	245
	M.	Pènthorum	184
Magnòlia	229	Phalàris	30
Malàxis	324	Phascòlus	268
Mâlva	259	Phlèum	28
Medèola	141	Phrÿma	241
Medicàgo	273	Phytolàcca	185
Melampÿrum	242	Pìnus	359
Mèntha	234	Plantàgo	51
Menÿanthes	77	Plàtanus	358
Menzièsia	149	Pòa	33
Mikània	295	Podalÿria	170
Milium	25	Podophÿllum	215
Mimulus	248	Polygala	264
Mitchèlla	52	Polygonum	155
Mitèlla	173	Polypòdium	388
Mollùgo	43	Pontedèria	79
Monàrda	9	Pòpulus	241
Monòtropa	175	Portulàca	188
Muhlenbèrgia	27	Potamogèton	63
Myosòtis	72	Potentilla	203
Myrica	366	Prenànthes	236
Myriophÿllum	345	Prinos	129
		Proserpinàca	48
	N.	Prunèlla	240
Neòttia	322	Prùnus	192
Nèpeta	237	Ptèris	394
Nùphar	216	Pycnànthemum	238
Nymphaèa	217	Pÿrola	173
Nÿssa	330	Pÿrus	195
	O.		Q.
CEnothèra	143	Quèrcus	349
CÈthùsa	113	Quèria	99
Onoclèa	391		
Onopòrdon	293		R.
O'rchis	313	Ranùnculus	224
Orobànche	244	Ràphanus	252
Oryzòpsis	25	Rhèxia	148
Osmùnda	387	Rhinànthus	242
O'strya	353	Rhododèndron	168
O'xalis	257	Rhodòra	172
		Rhus	118
	P.	Ribes	90
Pànax	375	Robìnia	277
Pànicum	40	Ròsa	197
Parnàssia	121	Rùbus	193

Rudbèckia	316	Struthiòpteris	392
Rùmex	142		
Rùppia	64		
		T.	
		Tephròsia	278
		Tèucrium	235
		Thalicttrum	220
		Thèsium	99
		Thlàspi	250
		Thùya	361
		Tiarèlla	178
		Tilia	214
		Trichòdium	27
		Trichostèma	240
		Trientalis	145
		Trifòlium	270
		Triglòchin	142
		Trillium	141
		Triosteum	89
		Triticum	45
		Tròllius	224
		Týpha	339
		U.	
		Ulmus	108
		Uniola	32
		Uraspèrnum	112
		Urtica	341
		Utriculària	8
		Uvulària	134
		V.	
		Vaccinium	150
		Vallisnèria	364
		Veràtrum	374
		Verbàscum	81
		Verbèna	238
		Vernònia	293
		Verònica	5
		Viburnum	115
		Vicia	269
		Villàrsia	78
		Viola	94
		Vitis	93
		W.	
		Wòodsia	389
		Woodwàrdia	394
S.			
Sabbàtia	76		
Sagittària	344		
Salicòrnia	1		
Sàlix	364		
Sàlsola	106		
Sambucus	117		
Sàmolus	84		
Sanguinària	214		
Sanguisòrba	62		
Sanicula	109		
Saponària	179		
Saròthra	121		
Sarracènia	213		
Saxifraga	177		
Schoenus	17		
Scirpus	19		
Sclerànthus	177		
Scrophulària	242		
Scutellària	239		
Senecio	307		
Silène	183		
Sinàpis	254		
Sison	114		
Sisymbrium	253		
Sisyrrinchium	256		
Sium	111		
Smilax	368		
Smýrniùm	113		
Solànum	84		
Solidàgo	303		
Sònchus	289		
Sòrbus	194		
Spargànium	339		
Spartia	24		
Spèrgula	135		
Spiraëa	196		
Stàchys	236		
Staphylèa	121		
Stàtice	124		
Stellària	181		
Stipa	31		
Strèptopus	131		

	X.		Z.	
Xànthium		342	Zizània	344
Xanthòxylum		376	Zostèra	334
Xylòsteum		88		
Xýris		17		

ENGLISH INDEX.

Agrimony	189	Bellwort	134
Alder	342	Bent Grass	28
Alum Root	106	Bethlehem Star	130
Alpine Enchanter's Night- shade	11	Bilberry	150
Alpine soft Grass	45	Bindweed	78, 158
Amaranth	343	Birch	355
Ammannia	53	Birdsnest	175
Anemone	222	Bitter Sweet	84
Angelica	110	Black Alder	129
Apple Peru	79	Blackberry	199
Aralia, Bristly	122	Bladder Tree	121
Arbor Vitae	361	Bladderwort	8
Aristida	31	Bloodroot	214
Arrow Grass	142	Blue Berry	150
Arrow Head	344	Blue eyed Grass	256
Arrow Wood	116	Blue Flag	15
Ash	380	Blue Grass	33
Aspen	369	Bog Rush	17
Avens	206	Boston Iris	16
Azalea	82	Brake	394
Balm of Gilead	370	Brome Grass	37
Baneberries	211	Broom Grass	43
Barberry	128	Broomrape	244
Basil	238	Buckwheat	159
Bass Wood	214	Buck Bean	77
Bayberry	366	Bugle Weed	9
Beach Pea	268	Bugloss	70, 71
Beach Plumb	193	Bulrush	22
Beach Drops	245	Burdock	290
Bean Vine	268	Burr Marygold	294
Beard Grass	43	Burr Reed	339
Bearberry	165	Butter Cups	226
Beaver Tree	229	Butterfly Weed	100
Bedstraw	55	Butternut	352
Beech	348	Button Bush	51
Bellflower	85	Button Wood	358
		Campion	183

Canary Grass	30	Cut Grass	50
Canada Reed	33	Cyperus	18
Canada Burnet	62	Dandelion	286
Canada Rice	344	Darnel	45
Cardinal Flower	85	Deerberry	153
Carpet Weed	43	Dewberry	200
Carrot	109	Diervilla, Yellow	39
Catchfly	183	Ditch Grass	17
Catmint	237	Dock	142
Catnep	237	Dodder	106
Cat's Tail Grass	23	Dog's Bane	99
Cedar, Red	370	Dog's Tooth Violet	135
Cedar, White	361	Dogwood	57, 119
Celandine	210	Dragon's Claw	326
Centaurella	52	Dragon Root	347
Chequer Berry	52	Duck Meat	334
Cherrytree	192	Dutch Myrtle	366
Chesnut	349	Dutchman's Breeches	263
Chickweed	181, 184	Dyer's Weed	267
Chokeberry	195	Eel Grass	334
Cicuta Bulbiferous	114	Eglantine	197
Cinna	29	Elder	117
Cinquefoil	203	Elecampane	301
Cleavers	54, 55	Elm Tree	108
Cleome	254	Echanter's Night Shade	11
Clivers	54	Feather Grass	31
Clover	271	Fern	387, 390
Club Moss	384	Fescue Grass	36
Club Rush	23	Fever Bush	160
Cocum	185	Feverwort	89
Columbine	219	Figwort	242
Cornel	59	Fire Weed	307
Cotton Grass	22	Flag	340
Couch Grass	45	Flag, Blue	15
Cow Berry	154	Flag, Sweet	137
Cow Parsnep	110	Flax, Virginian	123
Cowslip	221	Flea Bane	302
Cow Wheat	242	Flower de Luce	15
Crakeberry	365	Flowering Fern	387
Cranberry	154	Fools' Parsley	113
Cranesbill	256	Forked Aristida	31
Creeper	93	Fox Tail Grass	26
Cress, Amphibious	253	Fumitory	262
Crow Berry	365	Galium	54
Crowfoot	224	Garlic	130
Cucumber Root	141	Gentian	105
Cud Weed	301	Geranium	256
Currant, Mountain	90	Germander	235

Gill		234	Spear	Grass	33
Ginger, Wild		187	Spike	—	32
Ginseng		375	Sedge	—	335
Glasswort		1	Scratch	—	158
Golden Alexanders		113	Seneca	—	44
Goldenrod		303	Squirrel Tail	—	47
Goldthread		221	Star	—	131
Goosefoot		107	Sweet scented Vernal	—	27
Grape		93	Thin	—	27
Grass Poly		133	Timothy	—	28
Gromwell		71	Truncate Hair	—	31
	GRASS.		Velvet	—	44
Alpine Soft Grass		45	Wood Hair	—	31
Arrow	—	142	Yellow eyed	—	17
Beard	—	43			
Bent	—	28	Gooseberry, Wild		90
Black seeded Millet	—	25	Grass of Parnassus		121
Blue	—	33	Green Briar		368
Blue eyed	—	256	Ground Ivy		234
Brome	—	37	Ground Laurel		164
Broom	—	43	Groundnut		277
Canary	—	30	Groundsel		307
Cats Tail	—	23	Hacmatack		360
Cotton	—	23	Hair Grass		31
Couch	—	45	Hardhack		196
Cut	—	30	Hawkweed	285,	288
Darnel	—	45	Hazlenut		356
Ditch	—	25	Hedgehog Grass		46
Feather	—	31	Hedge Hyssop		7
Fescue	—	36	Hedge Mustard		253
Foxtail	—	26	Hellebore		374
Hair	—	31	Hemlock		110
Hedgehog	—	46	Hemlock, American		114
Herds	—	22	Hemlock Spruce		360
Knot	—	155	Hemp, Indian		100
Lyme	—	46	Hemp, Sea		367
Millet	—	25	Horned Utricularia		8
Oat	—	32	Henbane		31
Orchard	—	32	Henbit		235
Panic	—	40	Herb Robert		257
Quaking	—	36	Herd's Grass		28
Rattlesnake	—	36	Hickory		353
Ray	—	45	Highwater Shrub		317
Red Top	—	23	Hobble Bush		117
Reed	—	38	Hogweed		107
Rough	—	24	Hog Nut		354
Rye Brome	—	37	Holly		62
Soft	—	45	Honewort		114

Honeysuckle	271, 82, 87	Maple Tree	377
Hop	367	Marsh Marygold	221
Horehound, Water	9	Marsh Mallow	259
Horehound, Black	237	Marsh Rosemary	124
Hornbeam	357, 380	May Apple	215
Horse Mint	234	Meadow Sweet	196
Horsetail	382	Melilot	272
Horseweed	10	Mercury, Three-seeded	362
Hound's Tongue	72	Millfoil	345
Houstonia	53	Milk Weed	101
Hydrophyllum	73	Mint	234
Hyssop	235	Monarda	9
Indian Hemp	100	Monkey Flower	248
Indian Tobacco	86	Moose Wood	379
Indian Turnip	347	Mother Wort	235
Indigo, Wild	170	Mountain Ash	194
Iris	16	Mountain Currant	90
Iron Wood	358	Mountain Rice	25
Isnardia	61	Mouse Ear	72, 300
Ivy	120	Mowhair	395
Jersey Tea	91	Muhlenbergia	27
Juniper	371	Mullein	81
Knappweed	316	Mustard	254
Knavel	177	Myrtle, Wax	366
Knot Grass	155	Myrtle, Dutch	366
Labrador Tea	172	Nettle	236, 341
Ladies' Slipper	327	Nettle Tree	373
Ladies' Traces	322	New-Jersey Tea	91
Larch	235	Nightshade, Enchanter's	11
Laurel	169	Nightshade, Black	84
Leather Wood	149	Nightshade, Woody	84
Leptandra	6	None Such	278
Lettuce	237	Oak	349
Life Everlasting	299	Oat Grass	33
Lily	136	Oil Nut	352
Lime Tree	214	Orache	373
Lindernia	7	Orchard Grass	32
Lop Seed	241	Painted Cup	244
Locust Tree	247	Panic Grass	40
Loose Strife	74	Parsnip	113
Louse Wort	245	Parnassus, Grass of	121
Ludwigia	60	Partridge Berry	164
Lupine	267	Pea Vine	276
Lycopsis	71	Penny Wort	109
Lyme Grass	46	Pennvroyal	10
May Weed	314	Peppergrass	250
Maiden Hair	395	Petty Morel	122
Mallow	259	Pickerel Weed	130

Pigeon's Foot	1	Rose	197
Pig Nut	354	Rose Bay	168
Pimpernel	74, 84	Rough Grass	24
Pine	359	Rush	20, 138
Pine Sap	176	Salt Wort	106
Pine Weed	121	Samphire	1
Pin Weed	47	Sandwort	179
Pink	179	Sanicle	108
Pipe Wort	335	Sarsaparilla	122
Pipes	383	Sassafras	160
Plane Tree	358	Saxifrage	154, 177
Plantain	51	Scabish	148
Pleurisy Root	63	Scorpion Grass	72
Plumb, Beach	193	Scouring Rush	382
Poke Root	374	Scratch Grass	158
Poke Weed	185	Scullcap	239
Polypody	388	Sea Burdock	342
Poly, Grass	188	Sea Hemp	367
Polygonum	155	Sea Lovage	111
Pond Weed	63	Sea Arrow Grass	142
Poplar	369	Sea Rocket	251
Poppoose Root	127	Sea Wormwood	299
Prin	5	Sea Wrack	334
Primrose	148	Sedge	335
Privet	5	Self Heal	240
Proserpinaca	48	Seneca Grass	44
Prickly Ash	376	Seneca Snake Root	265
Puccoon	214	Senna, American	171
Purslane	188	Sensitive Fern	257
Quaking Grass	36	Shagbark	354
Radish	252	Shield Fern	389
Ram's Head	328	Shepherd's Purse	250
Raspberry	198	Sickle Pod	251
Rattlesnake Grass	36	Side-Saddle Flower	213
Rattlesnake Plantain	323	Silk Weed	101, 102
————— Fern	387	Silver Weed	203
Rattle Pod	267	Skunk Cabbage	59
Ray Grass	45	Snake Head	248
Redtop	28	Snake Weed	114
Reed	33	Snake Root, Virginia	328
Reed Grass	38	Snap Dragon	243
Reed Mace	339	Soap Wort	179
Reedy Cinna	29	Soft Grass	45
Rib Wort	51	Soft Monarda	9
Rich Weed	341	Solomon's Seal	132
River Bush	51	Sorrel	114
Robin's Plantain	302	Sow Thistle	289
Roman Wormwood	343	Spear Grass	33

Spearmint	234	Tupelo Tree	380
Spearwort	224	Unicorn Root	141
Speedwell	5	Velvet Grass	44
Spice Wood	160	Vernal Grass	27
Spike Grass	32	Vervain	238
Spikenard	122	Vetch	269
Spiked Willow Herb	146	Viburnum	116
Spleenwort	392	Vine	93
Spruce	360	Violet	94
Spurge	189	Viper's Bugloss	70
Spurrey	185	Virgin's Bower	219
Squirrel Tail Grass	47	Virginian Water Horehound	9
Star Grass	131	Virginian Lycopsis	71
Stitchwort	182	Walking Leaf	392
St. John's Wort	279	Walnut	352
Strawberry	202	Water Cress	253
————— Blite	3	Water Flag	339
Succory	285	Water Horehound	9
Sumach	118	Water Lily	216
Sundew	123	Water Millfoil	345
Sunflower	315	Water Oats	344
Swamp Pink	82	Water Parsnep	111
Sweet Fern	340	Water Pepper	155
Sweet Flag	137	Water Plantain	144
Sweet Gale	366	Water Starwort	2
Sweet Briar	197	Water Target	222
Sweet Uraspermum	112	Water Pimpernel	84
Sweet Viburnum	115	Waxwork	92
Sycamore	358	White Weed	301
Thimble Berry	198	White headed Bog Rush	17
Thin Grass	22	Whitlow Grass	250
Thistle	291	Whortleberry	150
Thorn Apple	79	Wild Indigo	170
Thorn Bush	194	Wild Bugloss	71
Thoroughwort	297	Wild Ginger	187
Thyme	237	Wild Cress	250
Toothwort	254	Willow	364
Tobacco	86	Willow Herb	146
Tobacco Pipe	175	Winterberry	129
Touch-me-not	93	Wintergreen	173
Tickseed Sunflower	204	Witchhazel	61
Toad Flax	243	Wood Sorrel	257
Traveller's Joy	219	Wood Waxen	267
Tree Primrose	90	Wood Hair Grass	31
Tree Cranberry	117	Woody Nightshade	84
Trefoil	270	Yarrow	315
Trumpet Weed	297	Yellow eyed Grass	17
Truncate Hair Grass	31	Yellow Rattle	242
Tulip Tree	229	Yew	371

INDEX

OF

SUBGENERA AND GENERIC SYNONYMS.

Abies	360	Goodyera	325
Acerates	104	Gymnostichum	46
Agropyron	45	Gyromia	141
Ampelopsis	93	Hedeoma	10
Anychia	99	Hedera	93
Apios	276	Hedypnois	285
Aronia	196	Helianthemum	212
Arrhenatherum	33	Hierochloa	44
Baronia	52	Hypopithys	176
Baptisia	170	Isolepis	22
Brachyletrum	27	Ixodia	222
Brasenia	222	Koeleria	32
Cakile	251	Larix	360
Calamagrostis	30, 39	Limodorum	326
Calystegia	79	Listera	324
Caprifolium	88	Melilotus	272
Carduus	291	Mespilus	196
Carya	353	Myrrhis	112, 114
Cassandra	75	Nephrodium	390
Castilleja	244	Ophrys	324
Caulophyllum	128	Oxycoccus	154
Cerasus	192	Phragmites	39
Chimaphila	174	Piptatherum	25
Chironia	76	Pisum	268
Chlora	76	Pogonia	325
Chærophyllum	114	Polypogon	29
Comandra	99	Polygonatum	133
Conyza	299	Pothos	59
Crossopetala	105	Psamma	39
Danthonia	32	Rhyncospora	17
Digitaria	41	Satyrium	323
Dilepyrum	27	Scandix	112
Dracontium	59	Seleucia	74
Dulichium	19	Serratula	293
Echinochloa	40	Setaria	40
Eleocharis	19	Smilacina	132
Elodea	270	Sophora	170
Epifagus	245	Spiranthes	322
Erica	141	Thymus	236
Euchroma	244	Torresia	45
Galega	276	Trachynotia	24
Glyceria	37	Trichophorum	22

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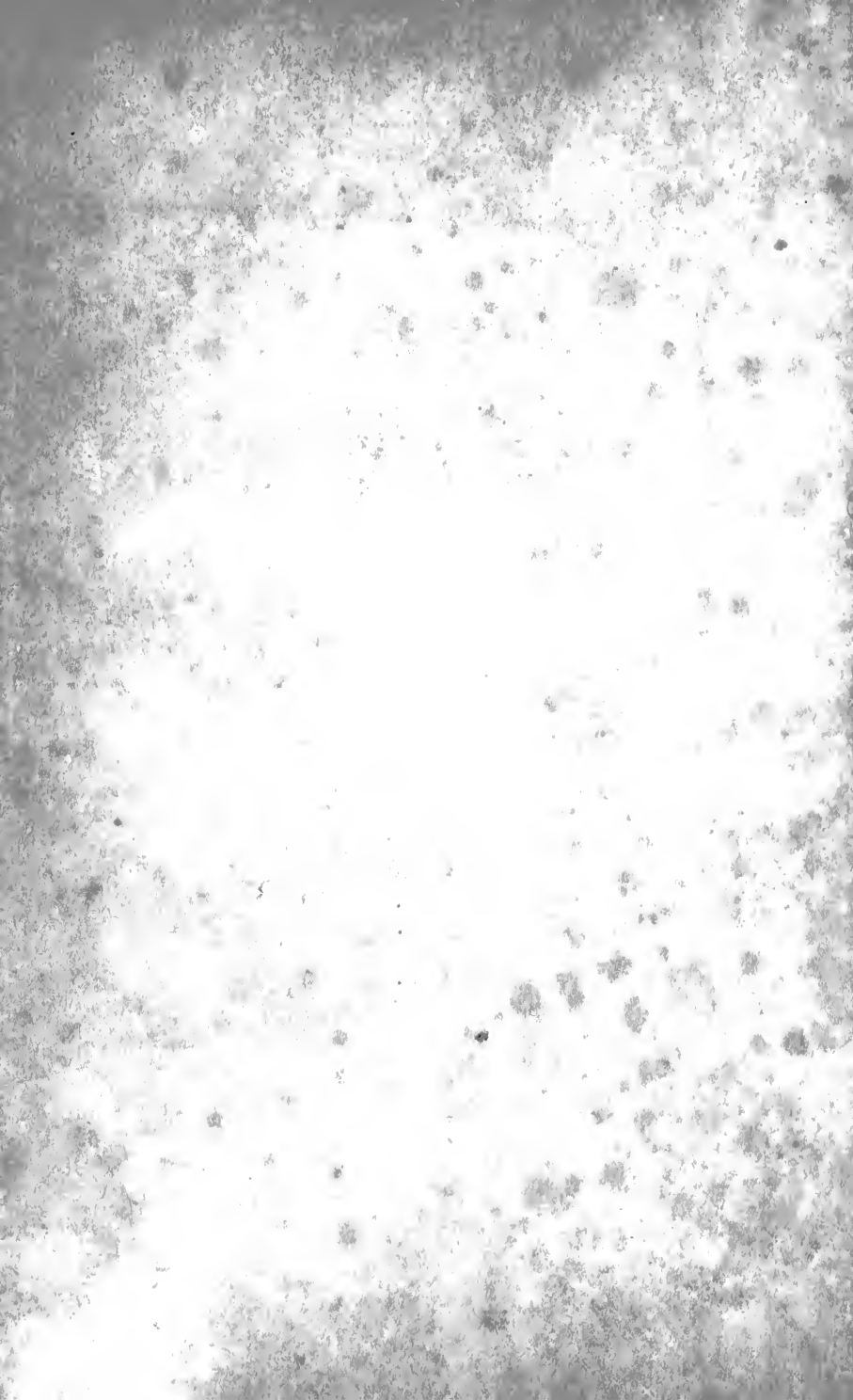
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